

Least Cost Housing :

Minimizing the Fiscal Impact of
Zoning and Subdivision Regulations



1949 - Our 1st home on Maple Street

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NOV. 1978

Central Naugatuck Valley
Regional Planning Agency
Sept. 1978

TITLE: Least Cost Housing: Minimizing the Fiscal Impact of Zoning and Subdivision Regulations

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SUBJECT: An analysis of the fiscal impact of zoning and subdivision regulations on the provision of least cost housing.

DATE: September 1978

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HUD PROJECT NO.: CPA-CT-01-00-1066

SERIES NO.: N.A.

NO. OF PAGES: 78

ABSTRACT: This report analyzes several possible means of reducing the rising cost of housing through changes in zoning and subdivision regulations. The report identifies those regulations and standards which may be unnecessarily increasing housing costs and which are above minimum standards consistent with the health, safety, and general welfare. The report discusses four separate housing types including single family, multi-family, mobile homes, and conversions of single family houses to two family units. The analysis includes an evaluation of the fiscal impact of zoning regulations (including lot size, and minimum floor area requirements) on the cost of a hypothetical "least cost" house built to the minimum standards allowed in each municipality.

The preparation of this report was principally the responsibility of Charles Vidich, Regional Planner.

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Introduction

Least cost housing as used in this report means housing with the lowest market price possible within the constraints of reasonable zoning and subdivision requirements, consistent with minimum standards of health and safety and the general welfare of a community. The term has been popularized through its appearance in Oakwood at Madison, a recently decided New Jersey case. The concept of least cost housing is used in this report as the basis for evaluating the wide range of standards and requirements established by local zoning and subdivision regulations which may unnecessarily increase the cost of housing.

This report points out many of the ways in which the cost of housing has been increased, partially as a result of excessive zoning and subdivision requirements. Much of the problem has been that those municipalities with inadequate tools for managing growth have often developed zoning and subdivision regulations which attempt to control growth by unnecessarily increasing the cost of development beyond minimum standards of health and safety.

The issue of least cost housing is twofold: a need for new regulatory tools for growth management and a need for zoning and subdivision regulations which are consistent with minimum standards of health and safety. The purpose of this report is to encourage local planning and zoning commissions to reevaluate their standards and requirements in light of their impact on the cost of housing. The CNVRPA intends to work closely with interested municipalities to develop standards for lower cost residential development which will still ensure that the environment is protected and quality housing is constructed.

Some of the broad programs which the CNVRPA intends to develop to enable its municipalities to work toward this goal are as follows:

1. Assist interested municipalities in the development of performance standards for roads and utilities:

The use of standards which allow for flexibility in the dimensions of a road, and the size of sewer, water and drainage pipes can have an impact on the cost of housing. Depending upon the conditions at the site and the expected use to be made of the utility or road, there may be a need for different standards for different developments. The CNVRPA will offer its assistance in developing flexible performance standards for subdivision regulations.

2. Development of model regulations for multi-family housing:

In order to provide a broader choice of housing types and opportunities, the CNVRPA will assist municipalities seeking to develop regulations for multi-family housing.

3. Development of model regulations for mobile home parks:

Recent innovations in the construction, design and siting of mobile and modular homes makes this housing type one of the most attractive low cost alternatives to the single family house built at the site. Model regulations will be developed which address the environmental, aesthetic and social concerns that have been raised by mobile home parks in the past.

4. Development of regulations allowing for conversions of single family homes to two family units:

The staff of the CNVRPA will assist municipalities seeking to offer more flexible zoning regulations for converting single family homes to two or three family units. The emphasis will be on developing regulations which are compatible with maintaining the character of existing neighborhoods.

5. Development of model cluster regulations:

Road and utility costs can often be lowered by allowing developers greater flexibility in minimum lot area and frontage requirements. Clustered residential developments are a good means of preserving the quality of the environment since they allow for greater open space by concentrating housing on a smaller portion of the land.

6. Assist municipalities in the development of short and long range growth management tools:

To the extent that municipal growth has been guided by controlling the cost of housing, new growth tools will be needed which are consistent with providing lower cost housing. The CNVRPA intends to work with interested municipalities to provide new techniques for controlling the type, intensity and timing of new development, but which will also allow for greater housing choice and opportunity within the Region.

Management Goals:

To the extent that municipal growth has been guided by controlling the cost of housing, new growth tends to be modest which are consistent with providing lower cost housing. The GROWTH tends to work with increased participation to provide new techniques for controlling the type, intensity and timing of new development, but which will also allow for greater housing choice and opportunity within the Region.

I. The concept of least cost housing

A municipality can markedly vary the cost of housing within its jurisdiction through its zoning and subdivision regulations. Zoning regulations can control housing quality and cost through a variety of mechanisms, including minimum lot size, lot frontage and floor area requirements. Similarly, subdivision regulations have had some influence on the cost of development through the imposition of excessively rigid road specifications, utilities requirements and allowable densities. Rising costs of construction, labor, interest rates on mortgages, inflation, market demand and outright speculation continue to be major factors in the current high cost of housing. However, regulatory mechanisms also influence the cost of housing and this report is concerned with the extent of that influence.

Based on the Consumers Price Index, the cost of purchasing a new home rose 70% and the cost of renting an apartment rose 38% in the United States from 1970 to September 1977. A conclusion reached in this report is that the municipal practice of increasing minimum lot size requirements, increasing required minimum floor areas for new housing and establishing rigid and expensive land improvement requirements for developers has accounted for some of the increase in housing costs. This report further indicates that housing costs created by planning and zoning regulations can be reduced, especially when there are requirements which are unnecessary for the protection of the health, safety and general welfare of the community.

In the case of Oakwood at Madison, Inc., et al., v. The Township of Madison and the State of New Jersey, 72 N.J. 481 (1977), the New Jersey Supreme Court emphasized that developing municipalities in New Jersey have an obligation to provide "least cost" housing. The Court stated that even if builders cannot provide publicly assisted housing to meet a developing municipality's fair share of the regional need, "... it is incumbent on the governing body to adjust its zoning regulations so as to render possible and feasible the 'least cost'

housing, consistent with minimum standards of health and safety, which private industry will undertake, and in amounts sufficient to satisfy the deficit in the hypothesized fair share."¹

The Court felt that even if newly constructed least cost housing did not meet the needs of all persons in the lower income groups, the "filtering down process" would indirectly provide additional and better housing for the insufficiently and inadequately housed of the Region's lower income population.

The concept of least cost housing articulated by the New Jersey Supreme Court includes three separate housing cost components which are to a large degree regulated by all municipalities in the Central Naugatuck Valley Region. These are raw land costs, land improvement costs and housing costs.

Land use controls in the CNVR regulate a variety of alternative housing types. Single family, multi-family, mobile homes and single family dwellings converted into two family units are the four forms of housing regulated by the Region's planning and zoning commissions. These regulations can have a strong influence on the least cost housing opportunities available in the Region when inexpensive housing is prohibited, limits are placed on the availability of low priced, suitably zoned land and land improvements unnecessarily influence the price of developments. Mobile homes and multi-family housing (3 or more dwelling units per structure) are the two principal methods of providing lower cost housing. Since the price of purchasing a mobile home can be as low as \$10,000, this housing option offers the greatest opportunity for low income persons. Apartments may also be a less expensive housing choice when land use controls allow developers to build large numbers of multi-family housing units with floor areas less than those required for single family houses.

The following analysis summarizes the fiscal impact of zoning and subdivision regulations which permit these four housing types and provides standards to evaluate the reasonableness of current development requirements. These standards

should serve as a basis for evaluating the reasonableness of current regulatory controls over housing and could possibly be a starting point for revising those standards and techniques controlling the provision of housing which have unnecessarily contributed to the rising cost of housing in the Central Naugatuck Valley Region.

II. Least cost single-family housing

Perhaps the most important means of controlling single-family housing costs is through minimum floor area requirements. In 1977, 118 of the 169 municipalities in Connecticut had adopted minimum floor area requirements.

(See map on page 7.)

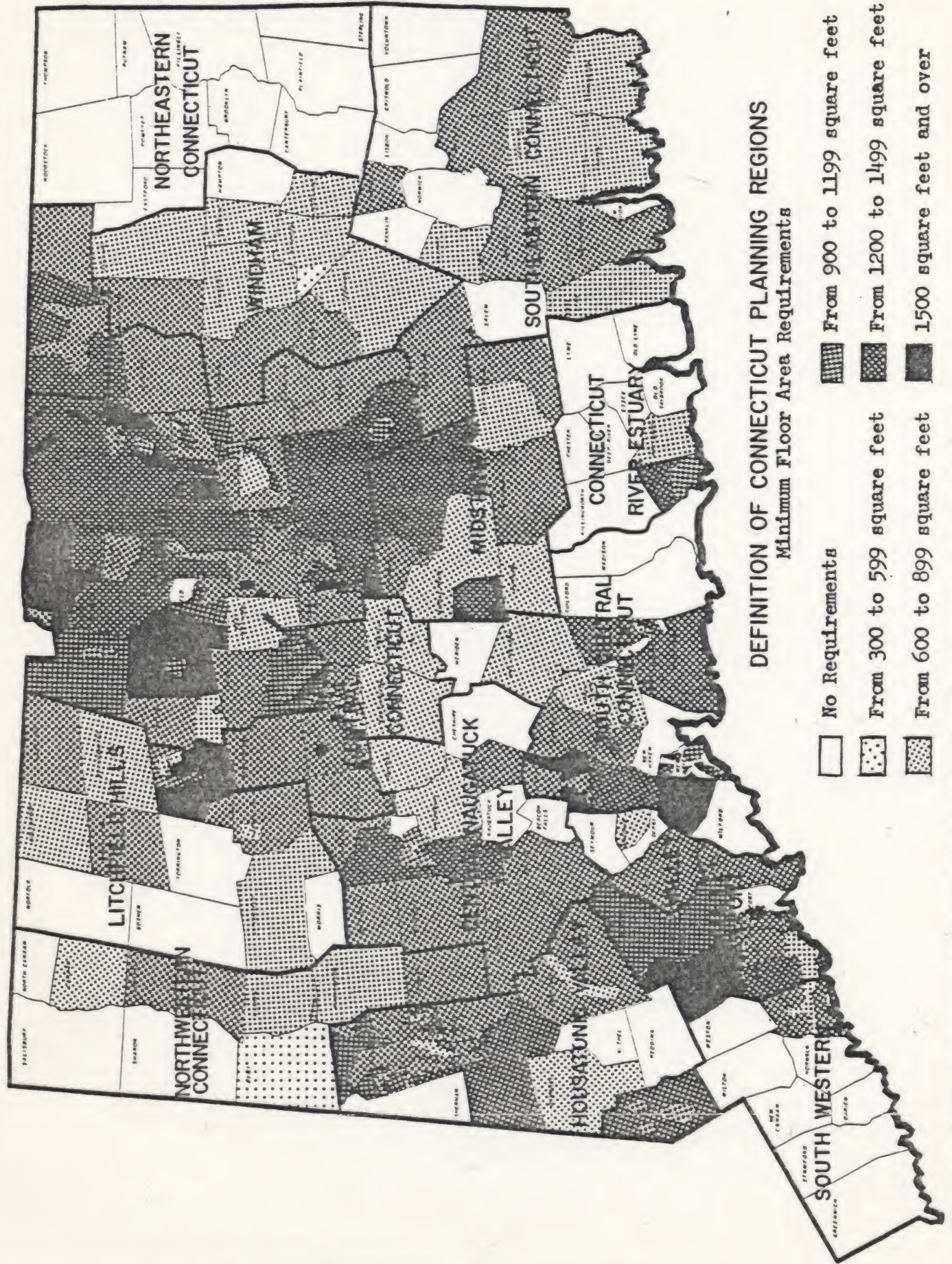
Table I: Comparison of Minimum Floor Area Requirements*
for One-Story, Single-Family Detached Houses
in Connecticut and the CNVR: December 1977

	Municipalities in Connecticut		Municipalities in the CNVR		Acres Zoned Residential in the CNVR	
	Number	Percent	Number	Percent	Acres	Percent
No Minimum Floor Area Requirements	51	30.2%	3	23.0%	32,826	19.3%
Minimum of 300 to 599 sq. ft.	3	1.7	0	0.0	0	0.0
Minimum of 600 to 899 sq. ft.	41	24.2	3	23.0	30,221	17.8
Minimum of 900 to 1199 sq. ft.	53	31.3	6	46.1	84,435	49.8
Minimum of 1200 to 1499 sq. ft.	19	11.2	1	7.6	22,019	12.9
Minimum of 1500 sq. ft. or more	2	1.2	0	0.0	0	0.0
Total	169	100.0%	13	100.0%	169,501	100.0%

Source: CNVRPA staff survey, December 1977.

*There are 58 municipalities in Connecticut which vary floor area requirements by zone and consequently have land in several of the categories listed above. However, this comparison only reflects the minimum floor area requirements found in that zone having the minimum floor area requirements in town. While a state comparison of acres zoned for each floor area category would provide a clearer picture of the impact of minimum floor area requirements, this data is not readily available.

Generalized Minimum Floor Area Requirements for One-Story Single-Family Detached Houses: December: 1977



Source: Central Naugatuck Valley Regional Planning Agency, December 1977

In the Central Naugatuck Valley Region, ten of the Region's 13 municipalities have adopted minimum floor area requirements. These requirements vary from a minimum of 720 square feet for a house in Wolcott to a minimum of 1300 square feet for a one story house in Middlebury. As can be seen in Table I, only 21 municipalities in Connecticut have minimum townwide floor area requirements of 1200 square feet or more. Of these 21 municipalities, Middlebury with a requirement of 1300 square feet had the third highest* townwide minimum floor area requirement in Connecticut.

However, more significantly, on a regional basis about 80% of the residentially zoned land requires houses to have minimum floor areas and 63% of the residentially zoned land requires floor areas with a minimum of 900 square feet.

As can be seen in Map 1, the highest minimum floor area requirements in the CNVR are found in the least developed municipalities immediately outside of the urban core. This same pattern can also be seen in the suburban municipalities surrounding Hartford, Bridgeport, New Haven and Danbury.

The broad pattern of high minimum floor area requirements and high land costs that have developed in many of the areas to the west, south and east of the CNVR may very well encourage those seeking lower cost housing to move to the Central Naugatuck Valley, particularly in light of the increasing exodus of business from New York into western Connecticut. Furthermore, the higher minimum floor area requirements immediately to the south and to the west of the CNVR may tend to encourage prospective residents of Connecticut and developers to "leap frog" over those expensive regions of the State nearest to New York and locate in the Waterbury area.

*Though 24 municipalities have adopted minimum floor area requirements which are higher than those in Middlebury, these higher standards only cover a portion of each municipality. (See Map 1.)

A. Current methods of regulating floor areas

There are a variety of approaches that have been taken to control the size of a new single-family house. Floor area requirements can include variations for the number of stories in the dwelling, variations according to the zone in which the house is built or variations based on the number of rooms in the house.

1. Variation of floor area requirements by the number of stories

The most common practice is to establish a minimum floor area requirement applicable to all houses regardless of the number of stories. Seven of the Region's municipalities (Bethlehem, Middlebury, Prospect, Thomaston, Waterbury, Watertown, and Wolcott) have adopted this approach while three municipalities (Oxford, Southbury, and Woodbury) have adopted specific floor area requirements for dwellings having one story, one and a half stories and two stories (see Table II). Regulating the minimum floor area required for the first floor of a dwelling can be a direct way of increasing the cost of housing.

According to Stephen Seidel, "the frequently used minimum first floor livable area is even more obviously unrelated to public health motives. Because the greatest cost of the house is incurred in constructing the foundation and first floors, this minimum requirement is directly related to house cost. The need to reduce these standards is heightened by the trend toward smaller family size."²

2. Variation of minimum floor area requirements by residential zones

While Watertown and Oxford are the only municipalities in the CNVR which have adopted different floor area requirements for different residential zones this method of regulating minimum floor area requirements is more common in other parts of Connecticut. Fifty-eight of the 118 municipalities in the State with minimum floor area requirements have varied the required size of the floor area by zoning districts. This technique has been justified as a tool for ensuring that new housing maintains property values and is compatible with existing development, but it may effectively deny lower income persons the opportunity of living in certain neighborhoods or of building smaller housing in areas more suitable to their needs.

Table II: Minimum Floor Area Requirements for Single-Family Dwellings by Size of the Dwellings and Residential Zone in the Central Naugatuck Valley Region: October 1977

In Square Feet			
Municipality	Minimum Floor Area for a 1 Story Dwelling	Minimum Floor Area for 1-1/2 Story Dwelling	Minimum Floor Area for a 2 Story Dwelling
Beacon Falls	None	None	None
Bethlehem	1,000	1,000	1,000
Cheshire	None	None	None
Middlebury	1,300	1,300 ¹	1,300 ¹
Naugatuck	None	None	None
Oxford (RA Zone)	1,000	1,200	1,400
Oxford (RD Zone)	800	960	1,120
Prospect	960	960	960
Southbury	900	1,200	1,200 ²
Thomaston	900	900	900
Waterbury	800	800	800
Watertown (R10 Zone, R-A, RG Zones)	750	750	750
Watertown (R20 Zone)	1,000	1,000	1,000
Watertown (R60, R80 Zones)	1,200	1,200	1,200
Wolcott	720 ³	720 ³	720 ³
Woodbury	900	1,200 ²	1,200 ²

¹A minimum of 1,000 feet on first floor

²A minimum of 800 square feet on first floor

³The minimum floor area increases with the number of rooms in the house as follows:
3 rooms or less, 720; 4 rooms, 800; 5 rooms, 900; 6 rooms, 1,000; 7 rooms, 1,100.

3. Variations of minimum floor area requirements by the number of rooms

Another less common method of controlling the size of a house has been to establish minimum floor area requirements which vary according to the number of bedrooms or rooms in the dwelling. Wolcott is only one of ten municipalities in the State which exclusively regulates minimum floor area requirements by the number of rooms in the dwelling. While this technique allows for greater flexibility in the design of a house, it still does not protect against overcrowding because there is no standard for the occupancy of the dwelling unit. Neither a uniform minimum floor area requirement nor a minimum floor area requirement which varies according to the number of bedrooms in a dwelling can actually control the number of persons who choose to live in that dwelling. In effect, minimum floor area requirements may force small families or single individuals to buy a house too large for their needs and may allow large families with 5 or 6 persons to live in an overcrowded situation. The New Jersey Superior Court in the Home Builders League of South Jersey, Inc., et al vs. Township of Berlin, et al case decided that "...the sections of the ordinances requiring minimum square feet since they are not based upon occupancy are invalid." In its decision the New Jersey Superior Court stated that

"...this is not a challenge to the municipalities requiring them to provide low-moderate income housing as in Mt. Laurel... This challenge cuts across economic lines. All persons, regardless of income, should be free to build the size of house best suited to their needs. This principle does not apply only to developing communities. If only one additional house is to be built, it should meet the needs of its owner as to size."³

While it is questionable whether Connecticut municipalities can control housing occupancy through zoning regulations, a committee of the American Public Health Association (APHA) set standards which offer some insight into the minimum spatial needs of American families. Although these standards were not adopted by the APHA, the Committee on the Hygiene of Housing established minimum floor space requirements based on occupancy levels ranging from 400 square feet for a one person family to 1550 square feet for a family of six. (See Table III).

Table III: Minimum Floor Space Required Per Person for Basic Household Activities as Established by the Committee on the Hygiene of Housing (but not adopted by) the American Public Health Association

<u>Number of Persons</u>	<u>Square Feet of Floor Space</u>
1	400
2	750
3	1000
4	1150
5	1400
6	1550

Source: American Public Health Association, Committee on the Hygiene of Housing, Planning the Home for Occupancy, 1950, p. vi.

4. No minimum floor area requirements

In December 1977, approximately one-third of the State's 169 municipalities required no minimum floor area. With the exception of the Naugatuck Valley area, these municipalities are generally located (see Map 1) either in the most rural areas not in the path of development or in areas along the Connecticut coastline where land costs are extremely high. Beacon Falls, Cheshire and Naugatuck are the only municipalities in the CNVR which have not established minimum floor area requirements.

B. Energy impact of floor area requirements

Some of the costs that result from large minimum floor area requirements are experienced after the home is completed when the home owner faces large monthly heating bills. Building smaller houses can mean smaller fuel bills. For example, take the case of two houses, built with exactly the same materials, insulated to the same degree, include the same number of windows and doors, use the same heating systems, and are occupied by two identical families with identical life styles, but one house has 750 square feet of floor area and the other has 1300 square feet. The house with 750 square feet of floor area will use approximately 37% less energy in the Waterbury area than an identical house having 1300 square feet. In terms of fuel oil, this represents a savings of about 324 gallons a year and in terms of

dollars, this represents a savings of about \$162.00, if we assume a fuel oil cost of 50 cents per gallon.

C. Historical trends in minimum floor area requirements

In 1971 the State Department of Finance and Control reported that, on the average, minimum floor area requirements in Connecticut had increased 30 square feet between 1964 and 1970.⁴ During that period one municipality in the CNVR (Watertown) raised its minimum floor area requirements. However, since then six municipalities in the Central Naugatuck Valley Region have either raised or established minimum floor area requirements. In 1970 Wolcott required 600 square feet, Middlebury, 650 square feet, Prospect, 900 square feet and Waterbury, 720 square feet of floor area per dwelling unit; but by December 1977, these four municipalities had raised their requirements to 720, 1,300, 960 and 800 feet respectively. Prior to 1970, Bethlehem and Thomaston had no minimum floor area requirements but have since adopted minimum requirements of 1,000* and 900 square feet respectively.

The combined effect of raising or establishing minimum floor area requirements in these six municipalities has been to increase the cost of housing for 69,863 acres of residentially zoned land or approximately 41% of all the residentially zoned land in the Central Naugatuck Valley Region.

D. Least cost land improvement requirements

While minimum floor area requirements have the most obvious influence on single-family housing costs, subdivision regulations can increase the final cost of housing by a wide array of development requirements. In the Central Naugatuck Valley Region, all thirteen municipalities have adopted subdivision regulations. The function of subdivision regulations has been to ensure that residential developments are constructed properly and that adverse economic, environmental and aesthetic impacts are minimized. However, municipalities often have over-emphasized certain aesthetic, environmental and economic considerations in

*In the absence of the adoption of zoning in Bethlehem, this is a questionable practice.

residential subdivisions with the result that land improvement costs, and consequently housing costs, have been unnecessarily increased.

In order to evaluate the reasonableness of the development costs created by the Region's 13 municipalities the following section analyzes the environmental significance of the performance standards of each municipality's subdivision regulations. It should be noted that the fact that development costs are high does not in and of itself indicate that a municipality has adopted unreasonable standards. In some cases these higher costs reflect valid environmental concerns for minimizing flood hazards or fiscal concerns with reducing excessive road maintenance costs in future years.* However, as will be seen in the following section, there are very few municipalities which have adopted standards for land improvements (including roads, sidewalks, and drainage) which are actually based on minimum least cost standards.

1. Road Ordinances

Road specifications are the most significant component of all land improvement costs. Our analysis of road specifications revealed that this variable accounted for anywhere from 45% of total land improvement costs in Beacon Falls to 28% in Thomaston (see Appendix 2B). These costs are influenced by the manner in which subdivision regulations control the width of pavement, its thickness and its composition.

One way of reducing road costs would be to establish minimum engineering standards based on soil conditions, road surface and road base composition, and likely traffic volumes. The required strength of a road varies according to the support capability of the soil and the type of materials used to make the road. If engineering tests rather than current standards were used as the basis for determining the minimum requirements for a local road, land improvement costs could be reduced considerably. With the exception of

*See Appendix 6 for a discussion of least cost development versus least cost maintenance.

Cheshire, each municipality has adopted only one set of townwide road specifications. This has generally led to the construction of over-designed roads since there are many areas in each municipality where soil conditions or traffic levels do not require use of the adopted standards.

2. Road Width

Minimum required road widths in residential subdivisions range from 22 feet in Woodbury to 38 feet in Waterbury. According to the American Association of State Highway Officials (AASHO), an effective pavement width of 20 feet is considered adequate for low volume roads "where meetings and passings are infrequent and the proportion of large trucks is low."⁵ Furthermore, AASHO indicates that minimum widths greater than 30 feet are considered superfluous (12 feet per lane and three feet per shoulder) for modern main highways and is excessively wide for local roads such as dead end streets serving low density residential areas.⁶ AASHO's road standards are supported by the design standards for roads recommended in Model Subdivision Regulations (presented below) and those of AASHO which are presented in Appendix 8.

Table IV: Design Standards for Roads

Improvement	Development Density Residential		
	Low	Medium	High
<u>Minimum Width Right-of-Way (in feet)</u>			
Local Road	50	50	60
Collector Road	50	60	70
Secondary Arterial	60	80	80
Primary Arterial	80	80	100
<u>Minimum Width Traveled Route (in feet)</u>			
Local Road	20 W/S*	30 W/C**	32 W/C**
Collector Road	22 W/S	32 W/C	32 W/C
Secondary Arterial	24 W/S	40 W/C	44 W/C
Primary Arterial	44 W/S	48 W/C	48 W/C

*With Shoulders (Roll Type Curb)

**With Curbs (Concrete Vertical Firm Curbs)

Source: Robert Freilich, Model Subdivision Regulations, American Society of Planning Officials, 1975, p. 85.

Table V: Thickness Equivalencies of Road Specifications
for Local Streets in Residential Subdivisions
in the CNVR: 1977*

Municipality	Base		Pavement		Total Thickness Equivalency
	Gravel	Broken Stone	Binder	Top	
Beacon Falls	6.0	1-1/2	8.30	4.10	19.9
Bethlehem	9.0		4.10	4.10	17.2
Cheshire**	6.5	(optional)	4.10	4.50	15.1
Middlebury	6.0		4.10	4.10	14.2
Naugatuck	4.0		3.75	3.75	11.5
Oxford	8.0		4.10	4.10	16.2
Prospect	6.0		4.10	4.10	14.2
Southbury	6.0		4.10	4.10	14.2
Thomaston	5.0		5.50	-	10.5
Waterbury	4.0		1.00	-	5.0
Watertown	6.0		7.50	4.10	17.6
Wolcott	4.0	4	4.10	4.50	16.6
Woodbury	9.0		4.50	4.50	18.0

*Thickness equivalencies refers to the inches of dense crushed aggregate base replaced by one inch of pavement or base. Actual figures reflect the thickness equivalencies of road specifications listed in Table VII.

**Cheshire offers developers three different road specifications. This one is Type II.

- Source: 1. National Asphalt Pavement Association, A Guide to Thickness Equivalencies for the Design of Asphalt Pavements, September 1967.
2. The State of Connecticut Department of Transportation, Standard Specifications for Roads, Bridges, and Incidental Construction 1974, as amended.
3. Road Ordinances and Subdivision Regulations in the CNVR, August 1977.

Note: Class I hot mix asphalt = 3.00
Class II hot mix asphalt = 2.75
Broken Stone = 1.0
Penetration Course = 1.0
Gravel = 0.5

Table VI: Road Specifications of Municipalities in the CNVR: December 1977

Municipality	Minimum Required Width of Pavement (feet)	Base		Pavement Type	Pavement		Total Pavement Thickness	Installation of Curbing	Sidewalk Width (both sides) (feet)	Gravel Base to Sidewalk (inches)	Concrete Thickness (inches)
		Gravel (inches)	Broken Stone (inches)		Bladder	Top					
Beacon Falls	32	12	1-1/2 BS*	BC*	3**	1-1/2**	4-1/2	No	None	-	-
Bethlehem	28	18	-	BC*	1-1/2**	1-1/2**	3	No	None	-	-
Cheshire	30	12	-	BC*	1-1/2**	1-1/2***	3	Concrete	8	8	6
Middlebury	28	12	-	BC*	1-1/2**	1-1/2**	3	BC*	None	-	-
Naugatuck	30	8	-	BC*	1-1/4**	1-1/4***	2-1/2	BC*	8	4	4
Oxford	30	12 BRG**	4 gravel	BC*	1-1/2**	1-1/2**	3	BC*	None	-	-
Prospect	32	12 rolled	-	BC*	1-1/2**	1-1/2**	3	BC*	None	-	-
Southbury	26	12 rolled	-	BC*	1-1/2**	1-1/2**	3	BC*	None	-	-
Thomaston	24	10 BRG**	-	BC*	2**	0	2	BC*	None	-	-
Waterbury	30	8 rolled	-	road oil	-	-	NA**	No	12	6	road oil
Watertown	30	12	-	BC*	2-1/2***	1-1/2**	4	No	None	-	-
Wolcott	30	8 BRG**	4 BS*	BC*	1-1/2**	1-1/2***	3	BC*	None	-	-
Woodbury	22	18	-	BC*	1-1/2***	1-1/2***	3	No	None	-	-

*Bituminous Concrete **Grade II ***Grade I *Broken Stone **Bank run gravel **NA = Not applicable

Sources: Subdivision regulations and road ordinances of the municipalities in the CNVR, October 1977.

In light of AASHO's standards it is significant that three municipalities (Beacon Falls, Prospect, and Waterbury) regardless of the density of development have adopted minimum subdivision road widths which are greater than 30 feet and eight municipalities in the Region require minimum road widths greater than 28 feet (see Table VI).

While low density residential developments can be served by local roads (e.g., dead end streets and circular roads) as narrow as 26 feet, developments located on collector streets or developments at higher densities will require wider roads. Table IV indicates that collector roads (e.g., roads serving as through streets) in low density residential developments require an additional 2 feet of traveled route and secondary arterials require an additional 2 feet of traveled route. In high density residential developments (e.g., condominiums and multi-family housing complexes) local roads must be 38 feet wide (32 feet for the traveled route). This standard has been adopted by the City of Waterbury as the minimum pavement width for all residential subdivisions. Though Waterbury's road width is greater than that adopted by all other municipalities, the density of existing development in Waterbury appears to make this a reasonable standard.

3. Road surface thickness

Table VI indicates that, with the exception of Waterbury* which only requires road oil for a pavement surface, all of the Region's municipalities require bituminous concrete. Pavement thicknesses range from 2 inches in Thomaston to 4-1/2 inches in Beacon Falls. However, the most common standard is 3 inches which has been adopted by 8 of the 13 municipalities. According to the American Association of State Highway and Transportation Officials report, AASHTO Interim Guide for Design of Pavement Structures 1972, the minimum layer thickness for surface course is 2 inches, 4 inches for the base course and where needed 4 inches for the subbase course. This minimum design standard is applicable to local roads with a service life of 20 years.⁷ However, AASHTO recommends that

*Waterbury is currently considering a new standard for road surface thickness.

roads be built using performance standards which consider expected traffic volumes, the support capabilities of the soil, frost, water problems and the desired service life of the road. This approach makes it possible to build a road consistent with minimum standards of serviceability for the expected life of the road. In contrast, current town standards mandate uniform thicknesses for each layer of the pavement resulting in either the overdesign or undersign of local roads.⁸

Based on the AASHTO surface course standard of 2 inches, all municipalities in the Region except Thomaston and Waterbury have established excessive minimum pavement thickness for local roads.* Furthermore, based on the AASHTO minimum thickness specified for the combined base and subbase course (8 inches) all municipalities in the Region except Waterbury, Naugatuck, and Wolcott have established excessive minimum standards. The type of base materials used on local roads in the CNVR and the thickness of the road base show tremendous variation. As can be seen in Table VI, minimum gravel base support ranges from a thickness of 8 inches in Waterbury to 18 inches in Woodbury and Bethlehem. In order to provide a standard for comparing the diverse road materials used and the different thicknesses required, Table V presents a summary of the Thickness Equivalencies of road specifications for local streets in subdivisions in the CNVR. The thickness equivalency rating refers to the inches of dense crushed aggregate base replaced by one inch of pavement or base. The strongest road construction specifications are those in Beacon Falls and are nearly four times as "thick" as those required by Waterbury and nearly twice as "thick" as those required by Thomaston and Naugatuck.

*The issue of standards however is somewhat more complex since excessive requirements for roads are often imposed to avoid unnecessary future maintenance costs. The question then is whether there should be a standard on how long a road should last. Unfortunately this can not be determined because the life of a road will depend upon the volume and nature of use and cannot be predicted with any precision. The issue is further complicated by the fact that later users of the road may not be limited to residents of the subdivision. Excessive road requirements can therefore lead to a situation where residents of a subdivision subsidize future taxpayers of the entire municipality.

4. Sidewalks

Two of the Region's urban municipalities (Waterbury and Naugatuck) require sidewalks in all subdivisions and another municipality (Cheshire) requires them in its 1/2 acre and one acre residential zones. There is ample support for including a sidewalk requirement in urban areas where access to schools, shopping centers and other activities can be accomplished on foot. However, the importance of sidewalks varies in inverse proportion to the size of the lot and varies directly with the proximity of homes to public schools and urban activities. An absolute sidewalk requirement can only be considered reasonable in urban areas where minimum lot sizes do not exceed 1/2 acre in size. In the case of Naugatuck where sidewalks are required in all subdivisions, housing costs in the R-30 district may be needlessly increased since this is an area which is predominately rural in character. It would be more reasonable to leave the final decision on the need for sidewalks in rural areas to the discretion of the local planning commission since low density areas generally do not require this type of site development improvement unless they are within close proximity to a public school. The policy stated in the subdivision regulations of seven municipalities in the Region is that sidewalks are only required when a development is within walking distance of a public school or they are found to be necessary for other unspecified reasons left to the commission's determination.

The Standards in Table VII clearly indicate that low density development areas on local, collector and secondary arterial streets should not include a mandatory sidewalk requirement.

Table VII: Standards on when Sidewalks are required

	Development Density			
		Residential		Non-residential Business - Industrial
		Low	Medium	High
Local	Optional*	Both Sides 4 Feet Wide	Both Sides 5 Feet Wide	Both Sides 6 Feet Wide
Collector Road	Optional*	Both Sides 5 Feet Wide	Both Sides 5 Feet Wide	Both Sides 6 Feet Wide
Secondary Arterial	Optional**	Both Sides 5 Feet Wide	Both Sides 5 Feet Wide	Both Sides 6 Feet Wide
Primary Arterial	Both Sides 5 Feet Wide	Both Sides 5 Feet Wide	Both Sides 5 Feet Wide	Both Sides 6 Feet Wide

*Optional, but where provided 4 feet minimum on either side of road with concrete curbs.

**Optional, but where provided 5 feet minimum on either side of road with concrete curbs.

Source: Freilich, Robert, Model Subdivision Regulations, American Society of Planning Officials, 1975, p. 97.

5. Design standards for storm drainage systems

In the CNVR, the minimum design standards for storm drainage are generally based on the concept of storm year indices for (1) drainage systems, (2) channel encroachment lines and (3) culverts crossing streets. Minimum standards for pipe drainage systems vary from a 10 year storm in five municipalities to a 25 year storm in Watertown and a 50 year storm in Woodbury. (See Appendix 4.) Minimum design standards for channel and trunk lines are fairly uniform among the six towns which have specified standards (Bethlehem, Prospect, Southbury, Watertown, Wolcott and Woodbury). With the exception of Wolcott and Woodbury, which require a 50 year storm as the standard, the other four municipalities have adopted the standard of a 25 year storm for the construction of channel or trunk lines. Finally, minimum design standards for culverts crossing streets is set at a 50 year storm in seven towns (Bethlehem, Cheshire, Prospect, Southbury, Watertown, Wolcott and Woodbury). The remaining municipalities of the Region have either not specified minimum design standards

or as in the cases of Middlebury and Naugatuck have specified minimum standards in terms of the size of the pipe. In Appendix 4 it is clear that Watertown and Woodbury have adopted the most expensive design standards for drainage systems. These standards may be excessive in many areas of Watertown and Woodbury, but especially in areas zoned for low density development where highly permeable soils and low slopes allow the water to be retained on the property. In those areas where water runoff can realistically be retained on site at a reasonable ultimate development of the watershed, the developer's cost of installing storm drainage systems could be reduced substantially. However, only one of the subdivision regulations in the Region provides alternatives to storm drainage piping such as by encouraging water retention on site through grass swales and other low cost techniques for achieving zero discharge from low density residential development.*

6. Dedication of open space

Ten of the thirteen municipalities in the Region specify standards for the provision of park and playground space in subdivisions. Only Beacon Falls and Oxford are without any design standards for park and playground requirements. As can be seen in Appendix 4, the minimum amount of land that must be turned over for open space in Southbury is 10% of the total area of the subdivision and 15% of the total area of the subdivision in the case of Woodbury. A recent Connecticut survey of open space dedication policies of municipal governments revealed that the prevailing requirements is that up to 10 or 15% of the total area of the subdivision be reserved for open space.⁹ According to Richard Yearwood in Land Subdivision Regulation, open space regulations that require the dedication of more than 10% of the total land area in a subdivision may begin to have an adverse effect on the profitability of a residential development.¹⁰ Using a 10% dedication requirement as a standard, Woodbury is requiring an excessive contribution of open space land.

*Woodbury has used retention ponds to supplement the natural drainage systems that can not handle the increase in direct runoff beyond the peak discharge of a 50 year storm.

It has also been suggested that minimum open space dedication requirements in large lot subdivisions may be superfluous if the only expected use is passive recreation. Large lot zoning, in essence, incorporates open space into each individual lot thereby making an overall dedication requirement of questionable value. According to several local planners, this problem manifests itself most in municipalities which have an inadequate standard for open space dedication and where the ultimate purpose of the dedication requirement is to develop active forms of recreation (i.e., ball parks). In this case the dedication of small lots for open space does not provide adequate space for active recreational activities (i.e., tennis, basketball, baseball). However, according to one zoning enforcement officer, where active recreation could be provided local residents are opposed to the development of activities that may attract people from outside the neighborhood.

7. The cost of land improvements

Land improvement costs are a significant part of the total cost of a new house. In some areas of the United States land improvement costs can be as high as 20% of the total cost of a new house. However, based on the subdivision requirements of municipalities in the CNVR land improvement costs represent about 10% of the total cost of a new house.¹¹ There is considerable variation in the improvement costs expected of developers in the Region. The variation in cost is a function of the minimum lot frontage requirements and minimum cost of development per linear foot as established by zoning and subdivision regulations. (See Appendix 2.)

The minimum cost of development varies from an estimated \$104 per linear foot in the 1/2 acre zone in Cheshire to \$38 per linear foot in the one acre zone in Thomaston. These cost variations reflect differences in the level of service required for each lot size. As can be seen in Table VIII, minimum development cost per linear foot are greatest in the small lot zones of the Region. Four municipalities (Beacon Falls, Cheshire, Naugatuck and Waterbury) have cost greater than \$80 per linear foot in zones requiring 1/2 acre or less for a building lot.* In contrast, minimum development costs for one acre lots or greater are highest in Beacon Falls, Bethlehem, Cheshire, and Prospect where costs are in all cases above \$54 per linear foot. These development costs when multiplied by minimum lot frontage requirements result in land improvement costs as high as \$5,900 per house lot in the 2 acre zones of Cheshire, \$5,700 per house lot in 2 acre zone in Prospect, \$5,400 per house lot in a 1-1/2 acre subdivision in Bethlehem.** (See Table VIII.) Minimum lot frontage requirements of 200 feet in Bethlehem largely explain the higher cost of development found in Bethlehem. Table VIII indicates that subdivision development costs in Bethlehem

*It must be emphasized that these costs are the minimum development costs created by the Region's subdivision regulations. The development costs may be much higher if (1) road construction involves the removal of large amounts of bedrock, (2) if roads require a great deal of cut and fill, (3) if telephone and electricity lines are required to be installed underground in areas where bedrock is near the surface, (4) if drainage problems are severe and require the installation of more catch basins and larger drainage pipes than normally required by the regulations, (5) if there are serious erosion problems which require that more trees or shrubbery be planted and greater landscaping be done on the slopes and (6) if easements are required in order to install drainage, water, sewer or other utilities. If one or more of these situations should arise, the cost of development could be considerably more than the cost shown in Table VIII. As an example, in areas where bedrock must be removed to construct a road, the cost of blasting and removal can be anywhere from \$30 to \$40 per cubic yard or approximately 3 to 4 times greater than the cost of road construction per square yard in the Region's 13 municipalities.

**Though there is no zoning in Bethlehem, the subdivision regulations require a minimum of 1-1/2 acres per lot.

Table VIII: Total Development Costs Per Lot and Per Linear Foot in the Largest and Smallest Lot Sizes in Each Municipality of the CVR: December 1977

Municipality	Largest Lot Minimum Frontage Requirement (in feet)	Large Lot Cost of Development (Linear Foot) ¹	Total Development Cost Per Lot	Smallest Lot Minimum Frontage Requirement (in feet)	Small Lot Cost of Development (Linear Foot)	Total Development Cost Per Lot
Beacon Falls	150	\$56.92	\$4,269	75	\$87.07	\$3,294
Bethlehem ²	200	54.02	5,402	200	54.02	5,402
Cheshire	50	58.78	5,878	50	104.09	5,251
Middlebury	200	46.58	4,658	125	61.16	3,856
Maugatuck	110	53.81	2,960	40	83.99	1,604
Oxford	175	47.91	4,192	175	47.91	4,192
Prospect	200	56.97	5,697	150	56.46	4,272
Southbury	175	46.79	4,094	90	50.37	2,286
Thomaston	150	38.26	2,870	100	68.58	3,459
Waterbury	75	68.84	2,581	60	68.23	2,065
Watertown	150	50.64	3,798	50	80.85	2,039
Wolcott	200	51.56	5,156	125	66.10	4,168
Woodbury	200	47.23	4,723	150	62.50	4,729

¹See Appendices 1, 2A and 2B for the detailed steps in calculating the minimum cost of development created by subdivision regulations in the CVR. These costs only reflect the costs required by the subdivision regulations and may not include all of the actual costs incurred by a developer seeking to build least cost housing in each municipality.

²Based on minimum frontage requirements of the Bethlehem subdivision regulations.

are nearly twice as high as those in Naugatuck's 3/4 acre zone even though the cost of development per linear foot is about the same. The fact that the minimum lot frontage requirement is only 110 feet in Naugatuck's 3/4 acre zone or almost half of that allowed by Bethlehem's subdivision regulations accounts for the lower development costs in Naugatuck.

Perhaps the most reasonable approach taken on minimum lot frontages is that found in Cheshire's zoning regulations. The minimum lot frontage requirement in Cheshire is 50 feet for all residential lot sizes. This standard allows developers greater flexibility in their site planning since small lot frontages may be feasible at the end of a cul-de-sac or in areas where the terrain requires a modification of the plot plan. Though a 50 foot minimum frontage is the exception for a 2 acre lot, it encourages developers to make the most efficient use of the land fronting on a public street.

E. Least cost residential land

Finally, housing costs are influenced by the market value of unimproved vacant land. Zoning and subdivision regulations can influence the final price an individual pays for a vacant lot in a variety of ways. The four principal methods of controlling the cost of land through zoning are:

1. lot size requirement;
2. delineation of zoning districts to control the amount of land allocated to each lot size category;
3. delineation of zoning districts on the basis of the quality and location of land suitable for each lot size category; and
4. utility requirements for each zoning district.

These factors when taken together have had a strong influence on the price of a house in each of the Region's 13 municipalities. By controlling the size of allowable building lots, limiting the supply of land zoned for a municipality's smallest lot size and delineating small lot residential zones in areas which have a greater amount of land unsuitable for development (due to steep slopes, wetlands or shallow depths of soil over bedrock), a municipality can discourage the construction of inexpensive housing.

Table IX: Residentially Zoned Land, Vacant Residentially Zoned Land and Vacant Residentially Zoned Land Suitable for Development in the CNVR: 1977

Density Categories	Total Acres of Residentially Zoned Land by Lot Sizes	Total Acres of Vacant Residentially Zoned Land	Total Acres Residentially Zoned Land Vacant and Suitable for Development
Zones allowing Multi-Family Housing	4,178 (2.4%)	280 (0.4%)	270 (0.7%)
Zones allowing lots less than 20,000 square feet	25,651 (15.1%)	9,420 (9.4%)	2,539 (7.2%)
Zones allowing lots from 20,000 to 39,999 square feet	16,554 (9.7%)	7,409 (7.4%)	2,494 (7.1%)
Zones allowing lots from 40,000 to 79,999 square feet	74,046 (43.7%)	50,401 (50.2%)	18,635 (52.8%)
Zones allowing lots from 80,000 square feet and over	49,175 (29.0%)	32,733 (32.6%)	11,374 (32.2%)
TOTAL	169,602 (100.0%)	100,500 (100.0%)	35,312 (100.0%)

Source: See Appendices 4A, 4B, and 4C.

1. Land supply

In 1978, 82.8% of the Region's vacant land available for single-family development was zoned for lot sizes of 40,000 square feet or more (see Table IX).

Areas zoned for single-family homes on lots of less than 20,000 square feet accounted for less than 10% of the vacant available residentially* zoned land and areas zoned for lot sizes from 20,000 to 39,999 square feet accounted for approximately 8% of the Region's vacant available residentially zoned land. However, outside of Waterbury small lots are rare with less than 3% of the available vacant land being zoned for lots less than 20,000 square feet. Furthermore, a greater percentage of the vacant land zoned for small lots is unsuitable for development. Approximately 35% of the vacant land zoned for lots of 80,000 square feet or more is suitable for development whereas only 27% of the vacant land zoned for lots of less than 20,000 square feet is suitable for development. This confirms the fact that land most suitable for development is more often placed in large lot zones rather than small lot zones.

Middlebury and Woodbury have placed the majority of their vacant available residential land into zones requiring a minimum of 80,000 square feet per lot. Nearly 56% of Middlebury's vacant available land and about 76% of Woodbury's vacant available land requires a building lot not less than 80,000 square feet in size. The relative lack of land available for small lots, in part reflects the fact that some municipalities have discouraged the extension of sewers as a method of providing lower cost housing and in part that other municipalities have properly tried to avoid the need of installing sewers by establishing large minimum lot sizes capable of safely supporting a septic system leaching field. In either case, land prices like

*Single-family development is also allowed in the non-residential zones of six municipalities. However, only 2% of the 7,454 acres of the Region's land allowing single-family houses in non-residential zones allows minimum lot sizes of less than 20,000 square feet. (See Appendix 3D.)

other commodities, are influenced by the laws of supply and demand.* Limiting the supply of land zoned for small lots during a period when most people would like to live in the suburbs, has inevitably increased the price of land.

The minimum required size of a lot will depend upon the method used to dispose of human wastes. The prevailing practice of suburban municipalities has been to rely upon septic system leaching fields when a dwelling unit is not located on a sewer line. This method of disposal requires an adequate amount of land and proper soils for the leaching field. The Regional Plan of Development indicates that one dwelling unit per two acres or one dwelling unit per acre with clustering are the minimum lot sizes necessary in areas that are never to be sewered. However, the Plan of Development emphasizes that lot size constraints for a septic tank no longer operate when sewer lines are extended or when alternative sewer technologies are contemplated.

The use of a sewer line or alternatives such as a community leaching field, on-site tertiary treatment plants, no-flush toilets, incinerator toilets and other innovations, can provide higher density development without any contamination of ground water. The Regional Plan of Development recommends moderate urban residential densities of 4 to 8 dwelling units per net acre in five suburban municipalities and low urban residential densities of 2 to 4 dwelling units per net acre in portions of each suburban municipality where sewer services are contemplated. These densities could offer a more efficient use of residential land and allow municipalities to focus growth.

*In 1977 approximately 63,000 acres or 54% of all the vacant land falling within zones allowing residential development in the Region had been classified as farm, forest, or open space under P.A. 490.¹² However, more importantly, the Region's five most affluent municipalities (based on estimated per capita income) have generally made greater use of the tax benefits of Public Act 490 than most of the other municipalities in the Region. Southbury (66%), Middlebury (80%), Woodbury (83%), Cheshire (55%), Bethlehem (95%), and Prospect (79%) have placed most of their vacant developable land under a lower tax assessment. This assessment practice has been cited by some assessors as the principal reason for the high land prices in their municipalities.¹³ In effect, by discouraging the sale of land and consequently the amount available on the market, P.A. 490 increases the demand and therefore the price of those lands not receiving lower tax assessments.

Using the Regional Plan of Development's density standards for sewer service areas, it is clear that few municipalities with sewers (except Waterbury) are making the most efficient use of their land. It is generally agreed that densities greater than 1/2 acre are not economically served by sewer lines. Nonetheless, the prevailing practice in the suburban municipalities has been to allow most developments to occur on lots from 1/2 to 2 acres. These size lots may in some cases be too small to support a septic tank but they are certainly too large to justify the extension of a sewer line as a means of providing least cost housing. The net effect of allowing development on these lot sizes has generally been unfavorable since septic systems often fail, leading to the eventual extension of sewer lines into low density neighborhoods as a corrective measure rather than as a means of reducing costs associated with large lot development.

Zoning for higher density development and requiring the installation of sewer service can substantially reduce the cost of a lot. Furthermore, higher density development need not be limited to the historic urban core of the Region. New waste disposal practices such as community leaching fields, on-site tertiary treatment plants and no-flush toilets can provide higher density development in areas not economically connected to a sewer line. The Connecticut Departments of Health and Environmental Protection have both recently approved the use of several types of new waste disposal alternatives and it is expected that some of these alternatives will allow municipalities to zone for higher density development outside of sewer service areas if they so choose. However, so far the Connecticut Department of Health has constrained the opportunities for increased densities with the use of no-flush toilets by setting lot size requirements equivalent to those needed for a septic system leaching field. This short term policy could be revised since it was based on the assumption that consumers purchasing a home with a no-flush toilet would want to switch over to a septic system.

2. Historical trends in minimum lot size and floor area requirements

During the last seven years seven of the Region's municipalities have attempted to limit high density and rapid development in their municipality by reclassifying small lot zones into zones requiring large lots. Since 1970, the municipalities of Middlebury, Naugatuck, Prospect, Southbury, Watertown, Wolcott, and Woodbury have rezoned approximately 37,700 acres for lower densities or about 22% of all the Region's residentially zoned land (see Appendix 5). In contrast, only 5,000 acres of land in the Region were rezoned for higher densities. These 5,000 acres are in zones which have been sewered or are within close proximity to sewer lines.

In addition to zoning for lower densities, three municipalities (Middlebury, Prospect, and Wolcott) have increased minimum floor area requirements for certain zones as well. On a regional basis, 5,746 acres or 4% of the Region's residentially zoned land experienced an increase in minimum lot size and floor area requirements (see Appendix 5). In the case of Middlebury, 11% of its residentially zoned land experienced an increase in both minimum floor area and lot size requirements while 30% of the residentially zoned land in Prospect and 16% of the residentially zoned land in Wolcott experienced increases of both minimum floor area and lot size requirements between 1970 and 1978.

3. The cost of land

A 1977 CNVRPA survey of the selling prices of vacant residential land found that on a regional basis the price of a lot increases with the size of the lot. The least expensive building lots on a regional basis were less than 1/2 acre in size and cost an average of \$9,600. Lots of 1/2 acre to less than 1 acre sold for an average of \$12,800 per lot. Lots of one acre to less than 2 acres sold for \$16,000 per lot and lots from 2 acres to less than 5 acres sold for \$20,000 per lot.

However, the price per acre decreases with the size of the lot. On a regional basis a developer purchasing a 1/2 acre lot would pay at the rate of \$25,000 per acre. For large tracts of land, the average price decreases to \$3,800 per acre for parcels from 5.0 to 9.9 acres in size and to \$1,900 per acre for parcels from 100 to 150 acres in size. These prices underscore the importance of assembling large tracts of land in order for a developer to offer lower land and housing costs within the Region.

As can be seen in Table X, the cost of a vacant building lot varies by municipality and tends to be highest in those municipalities which have the highest per capita incomes. The four most affluent municipalities of Southbury, Woodbury, Cheshire, and Middlebury recorded the most expensive land sales transactions during 1977. The average price per lot for all lot sales less than five acres in size, cost \$21,600 in Cheshire, \$17,800 in Middlebury, \$17,600 in Southbury, \$19,000 in Woodbury. As can be seen in Table XII, the average price per lot has a strong relationship to the 1972 estimated per capita money income in the Region's municipalities. The affluence of the community as measured by the 1972 per capita money income appears to have the strongest correlation with the cost of vacant land in the CNVR. Similar findings have also been presented by George Sternlieb and Lynne Sagalyn in their study Zoning and Housing Costs. They state:

"In urbanized areas (of New Jersey) the single most important variable, explaining price variation appears to be socioeconomic level of the community as measured by the value of extant owner occupied housing in that municipality."¹⁴

Table X: Mean Selling Prices of All Lots Less Than 5 Acres
in Size in the CNVR: Surveyed by Municipality
January 1, 1977 to October 1, 1977

Municipality	Mean Price/Lot	Mean Price/Acre
Beacon Falls	\$12,500	\$14,593
Bethlehem	14,858	6,594
Cheshire	21,568	14,982
Middlebury	17,818	11,764
Naugatuck	13,635	16,064
Oxford	14,687	9,065
Prospect	12,785	12,813
Southbury	17,585	9,468
Thomaston	8,813	6,940
Waterbury	9,112	20,000
Watertown	13,172	18,664
Wolcott	10,863	9,835
Woodbury	18,954	9,455
Region	14,529	10,789

Source: Central Naugatuck Valley Regional Planning Agency, "Selling
Prices of Vacant Residential Land: January 1, 1977 - October
1, 1977," November 3, 1977, Table 2.

Table XI: Comparison of the Rankings for the Estimated 1972 Per Capita Money Income and the 1977 Average Price Per Lot for Lots of Less than 5 Acres in the CNVR

	Per Capita Money Income Ranking	Average Price Per Lot Ranking
Middlebury	1	3
Woodbury	2	2
Southbury	3	4
Cheshire	4	1
Bethlehem	5	5
Wolcott	6	11
Naugatuck	7	7
Oxford	8	6
Watertown	9	8
Waterbury	10	12
Prospect	11	9
Beacon Falls	12	10
Thomaston	13	13

Source: CNVRPA "Selling Prices of Vacant Residential Land: January 1, 1977 - October 1, 1977" and the U.S. Bureau of the Census Current Population Reports Estimates and Projections: Series P-25, No. 552, May 1975.

While the Region's four "attractive" municipalities have experienced higher land costs, these higher costs are also influenced by the fact that much of the land in Cheshire, Middlebury, Southbury, and Woodbury is zoned for minimum lot sizes of 80,000 square feet or more. Smaller lots, when available, tend to be disproportionately higher in cost (per acre of land purchased) and sometimes sell for as much as larger 2 acre lots largely due to the scarcity of suitable land zoned for higher density development in these municipalities.

One method of compensating for the higher land costs created through a fixed zone system of land classification is the use of the "floating zone" for clustered development. The advantage of a floating zone when coupled with clustered development is that lot sizes can be reduced as long as overall densities remain the same. Cluster development regulations coupled with a floating zone allow a developer to purchase land where it is generally more available and where the cost of land per acre is less.*

*See Appendix 7 for a discussion of the role of the builder in providing least cost housing.

Reducing land costs can also be accomplished by revising zoning district boundaries in anticipation of sewer line extensions. Like clustering, down-zoning in areas peripheral to sewer lines can give developers the opportunity¹⁵ to reduce land costs and consequently lower housing costs in the urbanized portions of the Region. While clustering and down-zoning are effective mechanisms for compensating for the fiscal barriers created by the free market value of land, only six towns (Cheshire, Naugatuck, Thomaston, Waterbury, Watertown and Woodbury) have adopted cluster subdivision regulations and only three municipalities (Southbury, Wolcott and Watertown) have down-zoned land peripheral to sewer lines to accommodate higher density development at the time of sewer tie-ins.*

F. The cost of delay

The time it takes to complete a development affects the final costs of a house, as well. Developers who are faced with delays in getting approval of subdivision plans and zone changes must continue to pay the overhead costs attributable to staff, property taxes and interest payments on monies already invested in the development. A 1976 survey of the home builders industry conducted by Stephen Seidel revealed that "most home builders estimate that for every additional month added to the completion date, there is a 1 to 2 percent increase in the final selling price of the unit."¹⁶ Seidel also found that the average number of months it took developers to complete a project increased from 5.0 months in 1970 to 13.3 months in 1975. He concluded,

Based on these numbers, and a 1 percent cost increase for each month of delay, it is possible to approximate the cost impact of an extended development period. For a \$40,000 home, a delay of 8.3 months may mean an increase of \$4,320 in the price of the unit. No compensating benefits are received from such costs incurred simply because the regulatory approval process has been lengthened.¹⁷

These costs have become more salient during the last decade as many municipalities (including municipalities in the CNVR) have increased the number of steps and the

*The Real Estate Research Corporation Study, The Costs of Sprawl (1974) clearly reveals that better designed projects based on the principles of clustered development are the least expensive to build and require lower levels of public services than all other conventional forms of low density community design.

amount of time required to complete the subdivision application process. Developers are usually required to obtain approval from building inspectors, sanitarians, fire departments, Inland Wetland Agencies, Planning Commissions, Zoning Commissions, and in some cases may require advisory clearance from the regional planning agency, the assessor's office and the Connecticut Department of Transportation before they can proceed to construct housing.

Certainly the detailed procedures for reviewing subdivision applications by different agencies was designed to protect the public from the possibility of unsuitable and poorly planned developments. This goal is to be commended, but as many developers and members of planning and zoning commissions acknowledge, there are often many unnecessary delays which could be avoided if the application process and review procedure was simplified. Specifically, the concept of "one stop service" has been proposed as a way of reducing the delays faced by developers and in simplifying the work of planning, zoning and inland wetlands commissions.

Combining the function of the inland wetlands agency with a combined planning and zoning commission is one method of achieving "one stop service" for developers.

Evaluating the experience of other municipalities in the state which have combined these three functions could suggest (1) whether or not there are time savings to be achieved by "one stop service" and (2) whether these savings have an adverse impact on the quality of the review performed by commission members.

G. Total cost of a new house

Not everyone can afford to buy a house - whether it is new or used - in the Central Naugatuck Valley Region. Assuming that a developer desired to build the least expensive house allowed by zoning regulations on the least expensive lots available on the market, the municipalities of Cheshire, Naugatuck, Waterbury and Wolcott would be the least expensive locations to build such housing. However, even in these four municipalities only about half of the nation's families could afford to purchase a new least cost house. In contrast, the three most expensive areas to

build housing (the R-80 zones in Cheshire, Middlebury and Watertown) have excluded by virtue of income about 85 out of every 100 families in America. A least cost house built in Middlebury's two acre zone would cost an estimated \$66,800, \$68,300 in Watertown's two acre zone and \$62,500 in Cheshire's two acre zone.

These housing cost estimates tend to understate the true cost of buying a least cost house in these municipalities because more expensive land tends to encourage developers to build larger houses (than would otherwise be required by the regulations) in order to make the house saleable. As an example, a local municipal planner has indicated that developers are building houses with 1200 to 1300 square feet even though the zoning regulations allow for a minimum floor area of 900 square feet. Part of the reason for construction of houses which are larger and more expensive than required can be attributed to the cost of land. As a rule of thumb, developers expect that land costs should approximate 20% of the cost of the total residential package of house and lot.

A more subtle impact of large lot zoning is the developer's frequently employed ratio between house size and lot size. The ratio results from the fact that lenders and appraisers are reluctant to value, for lending purposes, the improved land component at more than twenty percent of the total residential package. Where this ratio of 5:1 is being used, regulations requiring greater lot size and width and a high level of improvement will lead to the construction of a larger more expensive house.¹⁸

Rising housing costs have not been a total bar for those truly committed to the purchase of a single-family house. A recent housing survey conducted by the Family Housing Bureau (FHB) indicates that "people obviously can afford homes despite the cost and despite the publicity saying they can't."¹⁹ In a 1977 national survey of house buyers FHB found that people are finding ways of affording new or used single-family homes even if it means sacrificing other interests and aspirations. The study found that house buyers are saving for a longer period of time to make the down payment, making larger down payments, spending more of their income on housing and are buying used houses (which tend to be less expensive) more

amount of time required to complete the subdivision application process. Developers are usually required to obtain approval from building inspectors, sanitarians, fire departments, Inland Wetland Agencies, Planning Commissions, Zoning Commissions, and in some cases may require advisory clearance from the regional planning agency, the assessor's office and the Connecticut Department of Transportation before they can proceed to construct housing.

Certainly the detailed procedures for reviewing subdivision applications by different agencies was designed to protect the public from the possibility of unsuitable and poorly planned developments. This goal is to be commended, but as many developers and members of planning and zoning commissions acknowledge, there are often many unnecessary delays which could be avoided if the application process and review procedure was simplified. Specifically, the concept of "one stop service" has been proposed as a way of reducing the delays faced by developers and in simplifying the work of planning, zoning and inland wetlands commissions.

Combining the function of the inland wetlands agency with a combined planning and zoning commission is one method of achieving "one stop service" for developers.

Evaluating the experience of other municipalities in the state which have combined these three functions could suggest (1) whether or not there are time savings to be achieved by "one stop service" and (2) whether these savings have an adverse impact on the quality of the review performed by commission members.

G. Total cost of a new house

Not everyone can afford to buy a house - whether it is new or used - in the Central Naugatuck Valley Region. Assuming that a developer desired to build the least expensive house allowed by zoning regulations on the least expensive lots available on the market, the municipalities of Cheshire, Naugatuck, Waterbury and Wolcott would be the least expensive locations to build such housing. However, even in these four municipalities only about half of the nation's families could afford to purchase a new least cost house. In contrast, the three most expensive areas to

than they did in the past.

The survey also found that marriage may be a prerequisite for home ownership for first time buyers since 17 out of every 20 of these home buyers are married and in three-quarters of these cases the wives are employed. While the working husband-wife family has made it possible for a greater number of families to "afford" housing, other families (of unrelated individuals) are in many cases prohibited from sharing the costs of home ownership. Zoning regulations in the Central Naugatuck Valley Region allow persons related by blood or marriage to share a common household but not all of the regulations allow unrelated individuals to share a common household.* This, of course, reduces the opportunity of using single-family dwellings as an alternative to living in an apartment.

Despite the fact that current land prices, floor area requirements and subdivision requirements for development have made it more difficult for most families to "afford" a new home, the "trickle down" pattern of existing housing still offers lower income persons the opportunity to live in some houses that are within their price range. As can be seen in Table XIII, approximately 2.9% of all houses sold in the Region during fiscal year 1977 cost less than \$20,000. However, these houses are generally older homes that are in poor condition. Faced with zoning regulations requiring expensive new housing, the turnover of the smaller older homes has offered lower income groups the only real opportunity of moving to the suburbs. This option, however, has and will continue to become a more limited opportunity due to the fact that the required size of new suburban homes is delaying, if not altogether halting, the process of "trickling down" new houses into the lower cost housing market.

*Undoubtedly, most planning and zoning commissions are concerned that single-family housing does not function as a "hotel" for any number of persons who wish to live together. As part of their duty of protecting the health, safety, and welfare, planning and zoning commissions have limited the number of unrelated individuals who may be defined as a family.

(continued on next page)

H. The unnecessary cost of regulation

Assuming that a municipality eliminated minimum floor area requirements and allowed single family homes to be built according to the demands of the market, what possible savings could be realized for individuals desiring to build smaller sized houses which also meet standards of public health? There is a range of possible cost savings achievable by building to least cost standards depending upon the size of the family, the zone, and the current minimum required size of a house. In the large lot zones of the Region, planning and zoning commissions could promote the construction of substantially less expensive houses by eliminating minimum floor area requirements and allowing homes to be built to the occupancy based space standards of the Committee on the Hygiene of Housing of the American Public Health Association (APHA). Assuming, as a hypothetical example, that a one person family chose to build a house consistent with the Committee's minimum floor space standards, he or she would only need 400 square feet. Using the Committee's minimum floor space standards, a two person family would only require 750 square feet of floor space to meet their needs. This amount of space is certainly less than most one and two person families ever build, but could serve as a bench mark. Housing cost savings ranging from \$9,120 in Wolcott to \$25,020 in Middlebury could be achieved by building a "starter" house for a one person family in a large lot zone. Similarly, housing cost savings ranging from \$15,080 in Middlebury to \$1,450 in Waterbury could be achieved for a two person family in the large lot zones. Finally, three person families could save at least \$5,000 in Middlebury and the

Oxford in the only municipality in the Region with zoning regulations not defining family. This could be interpreted to mean that anyone and any number of persons so choosing, could form a common household. At the other extreme, Cheshire had adopted the most restrictive definition of family by limiting those living in a single house-keeping unit to those related by blood, marriage or adoption. The remaining ten municipalities have provided for "families" of unrelated individuals but have limited their size to a specified number. Prospect and Woodbury exclude "families" of 4 or more unrelated individuals. Thomaston excludes unrelated individuals of 5 or more; Beacon Falls, Middlebury, Southbury, Waterbury, Watertown and Wolcott exclude unrelated individuals of 6 or more and Naugatuck excludes unrelated individuals when the number is seven or more.

large lot zones of Watertown. Since 42% of all home owners have less than 3 persons in their family,* this hypothetical example serves to highlight the fiscal impact of current floor area requirements.

If in addition to eliminating minimum floor area requirements, planning and zoning commissions reduced some portion of their 1-1/2 acre and 2 acre zones to minimum lot sizes of one acre (with provision for clustering) further savings could be achieved. In the hypothetical example of a one person family, the least cost savings from lot size reduction would be experienced in Beacon Falls and Naugatuck which require only one acre or less in their largest lot zones, while the greatest cost savings would be experienced in Middlebury and Watertown which require a minimum of 2 acres in their largest lot zones. Table XII-A indicates that Watertown could offer a one person family new housing for \$26,910 and a two person family new housing for \$36,850 in its large lot zone simply by allowing houses to be built to the APHA Committee occupancy based standards and reducing minimum lot size requirements to one acre. While reduction of lot size requirements to one acre might not be feasible in all locations, the CNVRPA Plan of Regional Development Map indicates that even where sewers are not available, there are areas in each municipality where soil conditions are favorable for one acre minimum lot sizes (with provision for clustering), either through the use of septic system leaching fields, community treatment plants or alternative septic system concepts (e.g., toilets like the Clivus Multrum can allow for smaller lot sizes since they reduce the amount of wastes by organic decomposition and the remains can eventually be safely buried or used as fertilizer. In contrast septic system leaching fields are dependent on soil conditions and may not always function properly on small lots).

Though there currently is very little land available for constructing housing on lots of one-half acre or less, the expansion of small lot zones would make available lower priced lots and therefore lower priced housing. The Plan of Regional

*As cited by the U.S. Department of Commerce Annual Housing Survey: 1975, 42% of all owner-occupied houses have less than 3 persons in their family, in Northeastern United States.

Development identifies portions of land in every municipality which could, at some point, be developed at densities of 2 to 4 dwelling units per net acre. Table

XII-B assumes, as a hypothetical example, that if one created or substantially expanded the opportunity for building starter houses on 1/2 acre lots, allowing one person families to build a house consistent with the APHA Committee standards, housing costs could be lowered from \$66,790 to \$25,650 in Middlebury (where half acre lots are not allowed but sewers are available) and from \$52,170 to \$28,340 in Woodbury (where half acre lots are not allowed and sewers are not available). Similarly a two person family could lower their housing costs from \$66,790 to \$35,590 in Middlebury and from \$52,170 to \$33,770 in Woodbury by building housing consistent with the APHA standards. (See Table XII-B.) Clearly Woodbury would require sewers or effective community treatment plants in order to consider offering half acre lots. In Middlebury half acre lots are already feasible and could be provided in areas anticipating the extension of sewer lines.

However, land cost savings through lot size reduction would be minimal in those municipalities that already have sewers and provide zones allowing half acre lots.

Table XII-B indicates that Beacon Falls, Cheshire, Naugatuck, Thomaston, Waterbury and Wolcott would not achieve any land cost savings through lot size reductions primarily because there is some land available for this density of development.

Nonetheless, housing costs in these small lot zones could still be substantially lowered by allowing housing to be build according to the demands of the market.

One might also find that an expanded supply of land available in small lot zones would lower land costs by eliminating some of the inflation in price created by excessive demand and land speculation.

Table XII: Proportion of American Families able to Afford a Least Cost Single-Family One-Story House in the CNVR: 1977

Municipality	Least Cost House on Minimum Sized Lot ¹	Required Annual Income ²	Percent of All U.S. Families in 1977 with Minimum Required Income ³	Least Cost House on Maximum Sized Lot ¹	Required Annual Income ²	Percent of All U.S. Families in 1977 with Minimum Required Income ³
Beacon Falls	\$33,770	\$15,350	48.3	\$42,380	\$19,260	32.9
Bethlehem	49,260	22,390	24.5	49,260	22,390	24.5
Cheshire	31,360	14,250	52.7	62,510	28,410	15.6
Middlebury	66,790	30,360	14.4	66,790	30,360	14.4
Naugatuck	32,560	14,800	50.6	39,040	17,750	38.6
Oxford	45,230	20,550	29.3	50,640	23,020	23.0
Prospect	47,320	21,510	26.8	58,440	26,560	16.8
Southbury	45,710	20,780	28.7	53,070	24,120	20.1
Thomaston	37,620	17,100	41.4	43,280	19,670	31.8
Waterbury	32,450	14,750	49.8	36,890	16,770	44.0
Watertown	35,640	16,200	45.0	68,280	31,040	14.0
Wolcott	31,720	14,420	52.0	39,700	18,050	37.5
Woodbury	52,170	23,710	21.1	55,260	25,120	17.8

Footnotes on next page.

¹Based on the F.W. Dodge Building Construction Cost Calculator and Evaluation Guide, March 1978, minimum floor area requirements in each municipality, and data supplied by septic system suppliers and well drilling firms in the Region, and CNVRPA Selling Prices of Vacant Residential Land, November 1977.

²Based on the medium value of housing to income ratio of 2.2 for Northeastern United States. Annual Housing Survey: 1975, United States and Regions, Bureau of the Census, U.S. Department of Housing and Urban Development, Office of Policy Development and Research.

³Based on the Report Money, Income and Poverty Status of Families and Persons in the United States: 1976, Advance Report, Bureau of the Census, Series P-60, No. 107 September 1977.

Source: CNVRPA staff work March 1978.

The information on housing construction cost assumes that a general purpose wood frame house of average quality is built to the minimum floor area requirements of each municipality. In the three municipalities without minimum floor area requirements (Beacon Falls, Cheshire and Naugatuck) a minimum standard of 750 square feet was used as the basis of comparison. The minimum floor area requirements were then multiplied by the construction cost per square foot derived from the F.W. Dodge Building Construction Cost Calculator and Valuation Guide for the Waterbury area covering the period December 1, 1977 to March 31, 1978. The cost per square foot decreases slightly with the size of the house ranging from \$32.11 per square foot for a 720 square foot house (Wolcott) to \$30.02 per square foot for 1300 square foot house (Middlebury).

The cost of the lot in the smallest and largest lot zones was based on the CNVRPA survey of mean selling prices of vacant residential land sold during the period January 1, 1977 to October 1, 1977. In the case of Pethlehem, where there is no zoning, the mean selling price of all lots under 5 acres was used as a proxy for land costs.

The cost of utilities varies by zone. However, with the exception of Waterbury where sewer and water is available everywhere, the largest lot zones in each municipality were assumed to require the installation of a septic system and private water well. A septic system was assumed to cost \$2,000 and a private water well at \$1,600 per dwelling unit. In the smallest lot zones the cost of sewer and water services is incorporated into the cost of the lot and therefore does not stand out as a separate cost in the municipalities of Beacon Falls, Cheshire, Naugatuck, Thomaston, Waterbury and Watertown. Bethlehem, Oxford, Prospect and Southbury require septic systems and private water wells. Wolcott only requires private wells and Woodbury only requires septic systems in their smallest lot zones. In Middlebury it was assumed that all future development would be in the largest lot zone where septic systems and private wells are required.

Table XII-A: Estimated Housing Cost Savings Achievable for One and Two Person Families Building Housing Consistent with Minimum Floor Area Standards and by Reducing Minimum Lot Sizes in Large Lot Zones to One Acre: 1977

Municipality	Least Cost House Based on Current Lot Size but Allowing 1 Person Family to Build Houses Consistent with AFPA Standards ² (400 Sq.Ft.)	Fiscal Impact of Floor Area Requirements		Fiscal Impact of Floor Area & Lot Size Requirements	
		Least Cost House Based on Current Lot Size but Allowing 2 Person Families to Build Houses Consistent with AFPA Standards ³ (750 Sq.Ft.)	Least Cost House Based on Allowing 1 Person Family to Build to AFPA Standards and Reduction of Minimum Lot Size to One Acre in Large Lot Zones ³	Least Cost House Based on Allowing 2 Person Families to Build to AFPA Standards and Reduction of Minimum Lot Size to One Acre in Large Lot Zones ³	
Bacon Falls	\$32,430 (\$42,380)*	\$32,430	\$42,380	\$30,860	\$40,800
Bellevue	49,260	32,460	42,400	27,870	37,810
Cheshire	52,570 (\$62,510)*	52,570	62,510	32,310	42,250
Middlebury	66,790	41,770	51,710	26,000	35,940
Naugatuck	29,100 (\$39,040)*	29,100	39,040	29,100	39,040
Oxford	50,640	33,840	43,780	28,290	38,230
Prospect	58,440	42,600	52,540	29,440	39,380
Southbury	53,070	35,790	45,730	29,460	39,400
Thomaston	43,280	26,010	35,950	23,850	33,790
Waterbury	36,890	25,500	35,440	23,580	35,440
Watertown	68,200	46,100	56,040	26,910	36,850
Wolcott	39,700	30,580	40,520**	26,250	36,190
Woodbury	55,260	37,990	47,930	29,470	39,410

*Since these municipalities have no minimum floor area requirements AFPA minimum standards for one and two person families have been used for comparison purposes. These municipalities can only offer cost savings through lot size reduction.

**Since Wolcott has a minimum requirement of 720 square feet there would be no cost savings by allowing two person families to build 750 square foot houses.

See page 39-6 for footnotes.

+Floor area standards reflect those established by the Committee on the Hygiene of Housing of the American Public Health Association.

Table XII-B: Estimated Housing Cost Savings Achievable for One and Two Person Families Building Housing Consistent with Minimum Floor Area Standards and in Areas Where the Size of Small Lot Zones Allowing Lots on One Half Acre has been Expanded: 1977

Municipality	Fiscal Impact of Floor Area Requirements			Fiscal Impact of Floor Area and Lot Size Requirements		
	Least Cost House Based on Current Lot Size but Allowing 1 Person Family to Build Houses Consistent with APHA Standards ² (400 Sq.Ft.)	Least Cost House Based on Current Lot Size but Allowing 2 Person Families to Build Houses Consistent with APHA Standards ² (750 Sq.Ft.)	Least Cost House Based on Allowing 1 Person Family to Build to APHA Standards and Expanding Zones Allowing One Half Acre Lots ⁴	Least Cost House Based on Allowing 2 Person Families to Build to APHA Standards and Expanding Zones Allowing One Half Acre Lots ⁴	Least Cost House Based on Allowing 2 Person Families to Build to APHA Standards and Expanding Zones Allowing One Half Acre Lots ⁴	Least Cost House Based on Allowing 2 Person Families to Build to APHA Standards and Expanding Zones Allowing One Half Acre Lots ⁴
Beacon Falls	\$23,830 (\$33,770)*	\$23,830	\$33,770	\$23,830	\$33,770	\$33,770
Bethlehem	49,260	32,460	42,400	23,200	33,140	33,140
Cheshire	21,420 (\$31,360)*	21,420	31,360	21,420	31,360	31,360
Middlebury	66,790	41,770	51,710	25,650	35,590	35,590
Naugatuck	22,610 (\$32,550)*	22,610	32,550	22,610	32,550	32,550
Oxford	45,230	30,240	43,780	23,810	33,750	33,750
Prospect	47,320	31,480	41,420	26,050	35,990	35,990
Southbury	45,710	28,430	38,370	22,770	32,710	32,710
Thomaston	37,620	20,350	30,290	20,350	31,250	31,250
Waterbury	32,450	21,060	31,000	21,060	31,100	31,100
Watertown	35,640	25,630	35,640	27,740	35,540	35,540
Wolcott	31,720	22,600	32,510**	20,340	30,280	30,280
Woodbury	52,170	34,890	44,830	23,830	33,770	33,770

*Since these municipalities have no minimum floor area requirements APHA minimum standards for one and two person families have been used for comparison purposes. These municipalities can only offer cost savings through lot size reduction.

**Since Wolcott has a minimum requirement of 720 square feet there would be no cost savings by allowing two person families to build 750 square foot house. See page 39-6 for footnotes.

*Floor area standards reflect those established by the Committee on the Hygiene of Housing of the American Public Health Association.

Footnotes to Tables XII-A and XII-B

1. Cost information was derived from the F.W. Dodge Building Construction Cost Calculator and Valuation Guide: December 1, 1977 to March 31, 1978, adopted minimum floor area requirements, data supplied by septic system suppliers and well drilling firms in the Region, and the CNVRPA survey of vacant residential land selling prices: January 1, 1977 to October 1, 1977. Standards of 400 square feet for a one person family and 750 square feet for a two person family were used in the three municipalities without minimum floor area requirements (Beacon Falls, Cheshire and Naugatuck).
2. The American Public Health Association's Committee on the Hygiene of Housing set minimum floor space standards at 400 square feet for one person and 750 square feet for a two person family. Housing costs for a 400 and 750 square foot house were derived from the F.W. Dodge Building Construction Cost Calculator and Valuation Guide: December 1, 1977 to March 31, 1978 and were estimated to be \$35 and \$31.92 per square foot respectively.
3. The cost savings achieved by reducing minimum lot sizes to one acre in large lot zones was based on vacant residential land selling prices for one acre lots between January 1, 1977 and October 1, 1977.
4. Cost savings achieved by reducing minimum lot sizes to one half acre were based on regional average land prices differentials between the large lot zones and zones allowing 1/2 acre lots or less in the Region. It was assumed that the regional average percent reduction in land prices of 1/2 acre lots compared to land prices of larger lots could be applied to each municipality's large lot zone to determine the potential land cost savings achievable if they allowed 1/2 acre lots as a matter of right. Since most suburban municipalities have either minimal amounts of land zoned for 1/2 acre lots (resulting in few land sales and inflated prices) or no land at all (resulting in no local land cost information), regional averages of land cost savings were the only way to formulate these hypothetical land cost savings for each municipality.

Table XIII: Distribution of Selling Prices of Single Family Houses^a in the CNVR:
July 1, 1976 - June 30, 1977

Selling Price	CNVR	Waterbury	Remainder of Region
Less than \$20,000	2.9%	9.6%	0.9%
\$20,000 - \$29,999	15.3%	45.4%	6.5%
\$30,000 - \$39,999	28.2%	31.9%	7.1%
\$40,000 - \$49,999	26.8%	9.2%	31.9%
\$50,000 - \$59,999	12.8%	1.9%	16.0%
\$60,000 - \$69,999	6.3%	0.4%	8.0%
\$70,000 - \$79,999	4.8%	1.2%	5.9%
\$80,000 - \$89,999	1.7%	0.4%	2.1%
\$90,000 - \$99,999	0.6%	-	0.8%
\$100,000 or more	0.6%	-	0.8%
Total	100.0%	100.0%	100.0%

^aData confined to a sample of 1,147 single-family houses.

Source: Central Naugatuck Valley Regional Planning Agency "Selling Prices of Single Family Houses in the CNVR" July 1, 1976 - June 30, 1977 (October 10, 1977), p.3.

III. Multi-family housing

For those who cannot afford or do not want a home, or do not need as much space, an apartment may be the only alternative available. Historically, those looking for multi-family housing have been forced to live in the urbanized portion of the Region. Table XIV indicates that in 1970 over 90% of all the multi-family housing units were located in Cheshire, Naugatuck, Waterbury, and Watertown. Furthermore, 84% of all the multi-family units authorized between 1970-1975 in the Region were in Cheshire, Naugatuck, Waterbury and Watertown. While past trends in multi-family housing construction focused development in the urban center, recent out-migration of industry, commerce and the population to the suburbs should have presumably encouraged the construction of multi-family housing in suburban areas as well. However, this has not occurred. One reason for the limited authorization of building permits for multi-family housing in the suburbs rests with current zoning regulations. Nine of the Region's twelve municipalities with zoning regulations allow for multi-family housing. However, only two of these municipalities (Waterbury and Watertown) allow for this form of housing without special requirements (see Table XV). The most common method of regulation is by special permit as is done in Cheshire, Naugatuck, Oxford, Thomaston, and Wolcott. Finally, one municipality allows multi-family housing by special permit and a site development Plan (Woodbury) and one municipality merely requires a site development plan (Southbury). The most common method of regulating the location of multi-family housing is by allowing it as a permitted use or as a use permitted by special exception in a higher density residential district. With the exception of Cheshire and Wolcott which allow for multi-family housing to be built anywhere ("floating zone"), all of the remaining municipalities regulating apartments only allow them to be built in small lot zones where, even if a special permit is granted, there is little available developable land.

Without suburban zoning allowing multi-family housing as a matter of right, developers are effectively limited to Waterbury and Watertown. In 1977 only 4,178

Table XIV: Multi-Family Housing in the CVR: 1970 - 1975

Municipality	Total Number of Multi-Family Dwelling Units in 1970	Number of Units of Multi-Family Housing in Two Unit Structures in 1970	Number of Units of Multi-Family Housing in Structures Having 3 or More Units in 1970	Mobile Homes or Trailers in 1970	Number of Multi-Family Dwelling Units Authorized by Building Permit Between 1970-1975
Beacon Falls	204	104	100	16	20
Bethlehem	53	31	22	5	2
Cheshire	917	345	572	5	197
Middlebury	102	66	36	6	-
Naugatuck	3,162	1,518	1,644	187	1,475
Oxford	94	71	23	10	-
Prospect	140	125	15	108	-
Southbury	165	111	54	19	878*
Tromaston	560	280	280	27	90
Waterbury	22,598	5,124	17,474	20	4,585
Watertown	1,363	805	558	16	289
Wolcott	313	109	204	5	-
Woodbury	575	103	472	12	215
Total	30,246	8,792	21,454	580	7,751

*The Southbury building inspector has calculated the total number of building permits to be 1,169 or 291 higher than the Department of Community Affairs.

Source: U.S. Bureau of the Census, Census of Housing, Fourth Count Summary Tape, Tabulation 9A, 1970 and the Department of Community Affairs Annual Report of Building Activity, 1970-1975.

Table XV: Regulations Governing the Construction of Multi-Family Housing in the CNVR: January 1978

Municipality	Regulations Governing Multi-Family Housing (3 or more dwelling units)	Zones in Which Multi-Family Housing is Permitted As A Matter of Right	Zones in Which Multi-Family Housing is Allowed by Special Permit	Minimum Size of Lot for Multi-Family (sq. ft.)	Minimum Lot Frontage Requirement	Minimum Floor Area Requirement per Dwelling Unit (sq. ft.)	Limitations on the Number of Dwelling Units per Structure	Minimum Lot Area per Dwelling Unit	Minimum Lot Area for Each Additional Dwelling Unit
Beacon Falls	No	None	None						
Bethlehem	No Zoning Regulations								
Cheshire	Yes	None	R20, R20A, R40	435,600 435,600	50 50	None None	10 10	20,000 40,000	None None
Middlebury	No	None	None						
Naugatuck	Yes	None	R1 R42 R01	40,000 0,000 5,000	40 70 40	None None None	None None None	40,000 8,000 5,000	2,500 1,800 1,000
Oxford	Yes	None	R1, RD	65,340	200	1,000	4	65,340	65,340
Prospect	No	None	None						
Southbury	Yes	None	R30A ¹	217,800	110	500	None	8,000	8,000
Thomaston	Yes	None	R-15	435,600	300	None	None	7,000	7,000
Waterbury	Yes	RM RH R0 CA		6,000 6,000 10,000 10,000 4,000	60 60 50 100 40	500 500 500 500 500	None None 12 12 12	1,800 800 NS 1,800 NS	NS NS NS NS NS
Watertown	Yes	RA BC		15,000 15,000 10,000	50 20 50	500 500 500	None None None	7,500 15,000 10,000	2,500 2,500 5,000
Wolcott	Yes	None	R30, R40	217,800	200	500 ³	10	7,500	7,500
Woodbury	Yes	None	R40, R60 ²	217,800	200	800	16	3,000 ⁴ NS	3,000 NS

1. Only site development plan is required in Southbury.
2. A site development plan and special permit is required in Woodbury.
3. Floor area requirements increase with the number of bedrooms with an efficiency apartment requiring 500 square feet, a 1 bedroom - 720 square feet, a 2 bedroom - 1,000 square feet.
4. Lot area requirements increase with the number of bedrooms per apartment with 3,000 square feet of lot area for an efficiency, 4,000 square feet for a 1 bedroom, 5,000 square feet for a 2 bedroom, 8,000 square feet for a 3 bedroom.
NS: Not specified.
Source: Zoning Regulations of each municipality in the CNVR, December 1977.

acres or 2.4% of all the residentially zoned land in the Region permitted multi-family housing and 98% of this land was in Waterbury. While 4,178 acres were zoned for multi-family housing in Waterbury and Watertown, only 280 acres were actually vacant and available for development in 1977.

Without a municipal growth management strategy, the net effect of suburban zoning policies has been to restrict multi-family housing to Waterbury and preclude the opportunity of building this form of least cost housing in the suburbs. Even if a developer should desire to build multi-family houses in the suburbs, he or she may be unable to find a parcel of land large enough to meet the zoning regulations. The lack of vacant and available land in areas which may allow multi-family housing by special permit has not only made it more difficult to locate a parcel sufficiently large to meet minimum lot size requirements but has increased land costs as well.

In the suburban municipalities (excluding Watertown and Naugatuck), minimum lot sizes for multi-family structures range from 5 to 10 acres (see Table XV). These requirements are not unreasonable but without sufficient vacant land in the areas zoned for multi-family housing, the required minimum lot size has tended to discourage or halt development altogether. A more reasonable approach appears to be taken in Cheshire. Cheshire regulates multi-family housing through "floating zone" districts which offer the developer the option of building almost anywhere* in town as long as certain specific requirements are met. However, the one drawback of providing multi-family housing through a "floating zone" is that the planning and zoning commission need not accept any proposals not to their liking. This becomes a more critical problem according to Seidel when there are inadequate standards for the use of flexible zoning techniques. He states:

Without the existence of adequate standards, the increased use of flexible zoning techniques may be (and frequently are) undermined by local officials demanding extortionary requirements in return for permission to build.²⁰

*The Cheshire Town Planner indicated that the floating zone in Cheshire might better be described as a quasi-floating zone since multi-family housing is required to have access to specific state highways and to be tied into sewer and water lines.

A. Least cost zoning regulations for multi-family housing

While lack of land zoned for multi-family housing has discouraged development, there are several other zoning requirements which may unnecessarily increase the cost of this form of housing. The following factors appear to create the greatest cost burdens and the least incentives to construct multi-family housing:

1. Minimum floor area per dwelling unit within multi-family housing:
Oxford, Southbury, Watertown, and Wolcott specify minimum floor areas for multi-family housing units. Except for Oxford, these minimum floor area requirements appear reasonable. In Oxford, where 1,000 square feet is the minimum floor area per dwelling unit, apartments must essentially be unrealistically large in size to meet the regulations. Significantly, no multi-family housing was constructed in Oxford between 1970 and 1976.
2. Limitation on the number of dwelling units per structure:
Four municipalities limit the maximum number of dwelling units/structure (Cheshire, Oxford, Wolcott, and Woodbury), and five municipalities (Naugatuck, Southbury, Thomaston, Waterbury, and Watertown) have placed no limitations on the number of dwelling units/structure in the multi-family zones. This standard for construction may increase the cost of least cost housing especially when the zoning regulations do not allow any economies of scale in building a large apartment. With the exception of Oxford, those towns which limit the number of dwelling units/structure, allow up to 10 (Cheshire) or 16 (Woodbury). However, Oxford only allows 4 dwelling units/structure.
3. Minimum frontage requirements for multi-family housing:
This requirement varies considerably from town to town and zone to zone. The multi-family minimum frontage requirements are for the most part much greater than those for single family houses. Four municipalities require 200 feet or more as a minimum for multi-family housing (Oxford, Thomaston, Wolcott, and Woodbury). Thomaston requires 300 feet or 100 feet more than what is required in Oxford and 250 feet more than what is required in Cheshire.
4. Bedroom restrictions:
Only Woodbury restricts the number of bedrooms in multi-family (garden apartments) units. They do not allow more than 3 per dwelling unit. With the exception of Woodbury, there are no limitations on the proportion of 3 or more bedroom dwelling units within a structure in the CNVR. Woodbury does not allow more than 10% of all dwelling units in a multi-family structure to have three or more bedrooms. This tends to discriminate against families with children who are seeking least cost housing.
5. The complexity of the regulations governing multi-family housing may discourage development and/or increase the costs of preparing plans and applications. In some cases the regulations have been written in a vague fashion which appear to have discouraged multi-family housing. In Middlebury and Beacon Falls, for example, the towns broadly define a dwelling to include multi-family housing but then do not provide height, area of bulk requirements for this form of housing. As a result, there is little clear understanding of how (if at all) these towns regulate this type of housing. Significantly, no multi-family housing was constructed in Middlebury between 1970 and 1976 and only 20 units were authorized for construction in Beacon Falls.

While the zoning regulations of Beacon Falls and Middlebury allude to multi-family housing within their definition of terms, the text provides no regulations for this form of housing (3 or more dwellings per structure). In the case of Prospect, the zoning regulations make no mention at all of multi-family housing. While these three municipalities have not regulated multi-family housing, two of these municipalities (Middlebury and Beacon Falls) more than any other suburban municipalities, are most capable of supporting higher density development. Both Middlebury and Beacon Falls already have sewer systems which are capable of handling additional growth. In the case of Prospect, a sewer line will probably be extended to its border with Naugatuck in about three years.

1. Limitation on the number of dwelling units per structure. Four municipalities limit the maximum number of dwelling units/structure (Greenwich, Oxford, Wolcott, and Woodbury), and five municipalities (Branford, Guilford, Hamden, Waterbury, and Waterbury) have placed no limitation on the number of dwelling units/structure in the multi-family sector. This standard for construction may increase the cost of least cost housing especially when the zoning regulations do not allow any command of scale in building a large apartment. With the exception of Oxford, those towns which limit the number of dwelling units/structure, allow up to 10 (Oxford) or 15 (Woodbury). However, Oxford only allows 5 dwelling units/structure.

2. Minimum floor area requirements for multi-family housing. This requirement varies considerably from town to town and even to zones. The minimum floor area requirements are for the most part much higher than those for single family houses. Four municipalities require 300 feet or more as a minimum for multi-family housing (Oxford, Hamden, Wolcott, and Woodbury). Three towns require 300 feet or 100 feet more than what is required in Greenwich. In Oxford and 300 feet more than what is required in Greenwich.

3. Bedroom restrictions. Only Woodbury restricts the number of bedrooms in multi-family (apartment) units. They do not allow more than 3 per dwelling unit. With the exception of Woodbury, there are no limitations on the number of bedrooms in multi-family housing within a structure in the DWT. Woodbury now has three or more bedrooms. This tends to discriminate against families with children who are seeking least-cost housing.

4. The compatibility of the regulations governing multi-family housing with other development and/or zoning the goals of governing plans and regulations. In some cases the regulations have been written in a way which which appear to have discouraged multi-family housing. In Middlebury and Beacon Falls, for example, the towns provide a definition of multi-family housing as a building or buildings which contain three or more dwelling units for the type of housing. As a result, there is little clear understanding of how (if at all) these towns regulate this type of housing. Unfortunately, no multi-family housing was constructed in Middlebury between 1970 and 1975 and only 30 units were authorized for construction in Beacon Falls.

IV. Mobile homes

The real least cost housing option is offered by the mobile home. This is the only form of housing (except for modular homes) which can offer home ownership for as little as \$10,000 excluding the price of the lot.

To some extent Beacon Falls has been able to compensate for its lack of multi-family housing by virtue of the fact that it allows mobile homes in mobile home parks by special permit. Three other municipalities in the Region allow mobile homes in mobile home parks including Bethlehem, Thomaston and Waterbury. With the exception of Bethlehem, which has no zoning, mobile home parks are allowed only in business, commercial or manufacturing zones within the Region (See Table XVI). Furthermore, Bethlehem is the only municipality which permits individual mobile homes to be permanently occupied outside of a mobile home park. The remaining municipalities have either prohibited mobile homes entirely (Naugatuck,* Prospect,* and Southbury, Watertown and Woodbury) or have allowed their use under emergency situations of fire or disaster for a period not exceeding 12 months (Cheshire and Wolcott), six months (Middlebury), or 3 months (Oxford). While Watertown and Woodbury prohibit the use of mobile homes, they do allow the storage of unoccupied mobile homes in the rear of residential lots.

Five municipalities have also regulated the maximum length of stay of visiting trailers. Middlebury, Watertown, Wolcott and Woodbury restrict visiting trailers from staying longer than 30 days (Middlebury and Wolcott), or 4 weeks (Watertown and Woodbury), while Bethlehem allows a trailer to visit up to 60 days if a temporary permit is secured from the Planning Commission.

Mobile homes can provide lower cost housing and have recently become much less offensive than the "freight trailer" appearance of mobile homes designs of earlier years. The latest model mobile homes have in essence become modular structures which emphasize the mobility of the trailer less than the efficiency and the inexpensive cost of this form of housing. This is especially true of the larger

*Naugatuck and Prospect previously allowed mobile homes. These two municipalities had 51% of the Region's mobile homes in 1970. (See Table XIV).

Table XVI: Regulations Governing Mobile Homes in the Central Naugatuck Valley Region: January 1978

Municipality	Regulations Allowing Mobile Homes As Permanent Dwelling Units But Only in A Mobile Home Park		Procedure Required for A Mobile Home Park	Zones Allowing Mobile Home Parks	Maximum Length of Stay of Mobile Homes Outside of Parks	Maximum Length of Stay of Mobile Homes Visiting Trailers	Allowance for Storage of Unoccupied Mobile Homes	Minimum Lot Size per Mobile Home (square feet)	Fees for Mobile Home Parks	Minimum Tract for Mobile Home Parks
	Yes	No	Site Plan	Business	12 months*	NS	NS	3,000	\$50	NS
Beacon Falls	Yes***	No	Permit	No Zones**	No limitations	60 days	Yes	as per sanitary regulations	\$50	NS
Bethlehem	Yes	No	Permit	No Zones**	No limitations	60 days	Yes	as per sanitary regulations	\$50	NS
Cheshire	No	No	Permit	No Zones**	12 months*	NS	NS	as per sanitary regulations	\$50	NS
Middlebury	No	No	Permit	No Zones**	6 months*	30 days	NS	as per sanitary regulations	\$50	NS
Naugatuck	No	No	Permit	No Zones**	Not allowed	NS	No	as per sanitary regulations	\$50	NS
Oxford	No	No	Permit	No Zones**	90 days*	NS	Yes	as per sanitary regulations	\$50	NS
Prospect	No	No	Permit	No Zones**	Not allowed	NS	No	as per sanitary regulations	\$50	NS
Southbury	No	No	Permit	No Zones**	Not allowed	NS	No	as per sanitary regulations	\$50	NS
Thamonton	Yes	No	Special Permit	Manufacturing	Not allowed	NS	No	as per sanitary regulations	\$24/mobile home	10 acres
Waterbury	Yes	No	Special exception	Arterial Commercial	Not allowed	NS	NS	as per sanitary regulations	NS	5 acres
Watertown	No	No	Permit	No Zones**	Not allowed	4 weeks	Yes	as per sanitary regulations	NS	NS
Wolcott	No	No	Permit	No Zones**	12 months*	30 days	Yes	as per sanitary regulations	NS	NS
Woodbury	No	No	Permit	No Zones**	Not allowed	4 weeks	Yes	as per sanitary regulations	NS	NS

*Mobile homes are allowed only as an emergency use under special conditions such as the repair of a dwelling damaged by fire.
 **Since there is no zoning in Bethlehem, mobile home parks are allowed anywhere.
 ***Individual mobile homes are also allowed anywhere in Bethlehem once a regular permit has been obtained from the Planning Commission.
 Source: Zoning Regulations of each municipality and the ordinances of the Town of Bethlehem, January 1978.
 NS: Not specified.

units called "double wides" which come in two sections and are pieced together at the site. Double wides are essentially built for one permanent location and provide the kind of floor space that one might normally associate with a small to medium size single family house. While the smallest mobile homes (12 feet wide by 44 feet long) have only 480 square feet of floor area, the largest double wide, mobile homes (28 feet by 64 feet) can have as much as 1,680 square feet with six or seven rooms.

That amount of floor space (1,680 square feet) is sufficient to meet the minimum floor requirements of every municipality in the State of Connecticut. Even the largest size (single wide) mobile home (14 feet wide and 70 feet long) with 924 square feet has sufficient space to satisfy the minimum floor area requirements of over half the municipalities in the state (95 out of 169) and 10 out of the 13 municipalities in the CNVR.

Mobile home living has also been discouraged by limiting the areas where mobile home parks are allowed. Less than .8% of all the Region's land allows mobile home parks as a use by special permit. These zones are in the heavily developed commercial district of Waterbury, the business district of Beacon Falls and the manufacturing district of Thomaston where little or no vacant land is available or where little or none of the land is suitable for development.

According to one mobile home salesman, most municipalities have objected to the placement of single wide mobile homes on individual lots but ironically when double wides are introduced, they are generally treated more favorably.²¹ In large part, the recent establishment of national building standards for mobile homes along with the increasing popularity of the double wide mobile homes (which are a near look-alike to modular housing) has made mobile home living a less "mobile" and more permanent option for lower income families.

The current objections to mobile home developments have lost much of their support as modular housing and double wide mobile homes have become virtually indistinguishable in design. The only "birthmarks" to separate modular housing from mobile homes are that the former require a cement foundation while the latter includes a steel frame foundation as part of its design. However, many mobile homes can be set on concrete blocks and therefore may not be distinguishable from modular homes in their appearance. Those zoning regulations which distinguish between these two techniques of constructing housing (through prohibitions on mobile homes) will find that previous objections to mobile homes are no longer as valid.²² With the exception of prefabricated housing, mobile homes are virtually the only low cost housing option in the \$30,000 price range and are no longer to be considered "mobile." They can be placed on a site and made to look like any other home. Modular mobile homes can cost more than \$50,000 and can have as much as 2,400 square feet of living area designed in a variety of other shapes than the standard, rectangular mobile home. Perhaps the greatest impact of the mobile home industry has been to create a market for low cost, pre-built, modular homes offering lower income families, young couples, the elderly and students a chance to live in their own home.

V. Conversion to two and three family housing

All but one of the Region's municipalities with zoning regulations provide guidelines for the conversion of single-family dwellings to contain two dwelling units under specific conditions (see Table XVII). Five of the Region's municipalities allow conversions as a special exception and six allow conversions as a permitted use, as long as they are located in specific zones and have minimum lot sizes, and floor areas and were built prior to specific dates. Five of the Region's municipalities require minimum floor areas and seven require minimum lot sizes for each dwelling unit in a converted structure.

This may not seem to be a significant method of expanding the availability of rental units in the suburbs, but lacking a clear policy for regulating multi-family housing, conversions are often the only way new rental units are made available in some municipalities. The municipalities of Woodbury and Watertown, like other municipalities, allow conversions of single-family dwelling units but have also gone a step further by allowing conversions of the older larger homes to contain more than two dwelling units if they were constructed more than 25 years ago (Woodbury) or if constructed prior to February 1955 (Watertown). The Woodbury Town Planner estimates that in Woodbury there are as many as 200 dwellings that have been converted for rental units, with the bulk of them located in older homes in the town center. The two family home is the predominate multi-family housing opportunity in most suburban municipalities of the CNVR. With the exception of Middlebury and Prospect which do not allow the construction of two family houses, all of the municipalities in the Region allow for their construction as well as the conversion of existing one-family structures to two-family units. Prospect neither allows for their construction nor for the conversion of one-family dwellings to contain two dwelling units.

As can be seen in Table XIV, dwellings containing two dwelling units accounted for 48% of all the multi-family housing available outside of Waterbury at the time of the 1970 Census. However, in those municipalities which are without regulations

Table XVIII: Regulations Governing the Conversion of Existing Single-Family Dwellings to Contain Two or More Dwelling Units in the CNVR: January 1978

Municipality	Regulations Allowing the Conversion of One-Family Dwellings to Contain Two Dwelling Units	Use Allowed by	Zoned in Which Allowed	Number of Dwelling Units Allowed	Minimum Lot Requirements for Each Dwelling Unit	Minimum Floor Area Requirement for Dwelling Before Conversion	Minimum Square Footage Required for Conversions Containing 2 D/U	Residential Structures Eligible for Conversion
Boscon Falls	Yes	Special exception	All Residential zones	2	NS	No		All
Bethlehem	No Zoning Regulations							
Cheshire	Yes	Permitted use	All Residential zones	2	Yes	No		All
Middlebury	Yes	Special exception	All Residential zones	2	Yes	No		All
Naugatuck	Yes	Permitted use	RA1, ROL*	2	No	No		All
Oxford	Yes	Special exception	All Residential zones	Up to 4	Yes	Yes	2000	All
Prospect	No							
Southbury	Yes	Permitted use	R30A, R30, R40, R60, R80	2	Yes	Yes	1800	All
Thomaston	Yes	Board of Appeals	All Residential zones	2	Yes	Yes	1400	Built prior to 1940
Waterbury	Yes	Permitted use	RL, RM, RH Residential zones	depends on zone	No	Yes	1200	All
Watertown	Yes	Permitted use	All Residential zones	2 or more	No	Yes	from 1250 to 1700	Built prior to 2/1/55
Wolcott	Yes	Special permit	R30, R40	up to 12	Yes	No		All
Woodbury	Yes	Permitted use	R40, R60	2 or more	Yes	No		Built 5 years ago for 2 unit conversions**

*In the RA2, conversions are allowed by special permit.

**Conversions containing more than 2 dwelling units must be built 25 years ago.

Source: Zoning Regulations of each municipality, January 1978.

governing the construction of multi-family housing (Beacon Falls, Middlebury, and Prospect) or have multi-family regulations which deter the construction of this form of housing (Oxford), the two-family dwelling is even more popular. Approximately 51% of the multi-family housing in Beacon Falls, 65% of the multi-family housing in Middlebury, 76% of the multi-family housing in Oxford and 80% of the multi-family housing in Prospect was in two unit structures at the time of the 1970 Census. Prospect, although it does not have regulations allowing the conversion of single family dwellings to contain two dwelling units, had 125 two-family dwellings in 1970.

If larger sized homes continue to be required by the Region's suburban municipalities, it is quite likely that conversions of single family homes to two-family use (e.g., subletting basements and annexes) will become more popular especially if multi-family housing, mobile homes, and smaller sized single family houses remain prohibited uses.

VI. Summary of Findings

Zoning and subdivision regulations in the Central Naugatuck Valley frequently include provisions which severely limit or prohibit the construction of moderately priced housing. The four forms of housing regulated by the Region's Planning and Zoning Commissions are single family, multi-family (3 or more dwelling units), two family and mobile homes.

Single family housing has been the most common form of residential development in the Region, in part due to the severe restrictions to the development of multi-family housing or mobile homes. Nevertheless, even single family housing opportunities have been affected by the costs created by the Region's zoning regulations. The principal means that municipalities have used to control the cost of single family housing is through the adoption of minimum floor area requirements. Nine out of ten of the Region's municipalities have minimum floor area requirements which exceed the spatial needs of two person families as set by the Committee on the Hygiene of Housing of the American Public Health Association. (See p. 11.) This not only increases the cost of construction, but results in higher costs for home heating.

Another factor contributing to the cost of single family housing has been a general trend toward the revision of zoning regulations so as to require larger minimum sized houses. Over the last eight years four municipalities have increased their minimum floor area requirements anywhere from 60 to 650 square feet. (See p. 13.)

The rising cost of housing has also been influenced by subdivision regulations requiring expensive land improvement requirements. In particular, road specifications have had the greatest impact on land improvement costs through the imposition of excessively wide and thick roads. (See pp. 14-19.) In some municipalities, other land improvements such as sidewalks in low density residential zones and excessive open space dedication requirements have unnecessarily increased housing costs. (See pp. 19-21.)

Land improvement costs are also influenced by minimum lot frontage requirements.

Some municipalities have used frontage requirements to offset these costs while others have allowed this requirement to aggravate the costs created by land improvement requirements. (See pp. 21-24.) High land improvement costs can be reduced by lowering lot frontage requirements and/or by adopting cluster regulations. However, only six municipalities in the Region have adopted regulations allowing clustered residential development. (See p. 31.)

Housing costs have also been directly influenced by a limited supply of low cost land. Underzoning for high density residential development and requiring development on large lots of 2 acres or more has contributed to the high cost of land. In 1977 less than 10% of the Region's land was vacant and available for residential development on lots of 20,000 square feet or less. (See p. 26.) Significantly, 97% of this land was located in Waterbury. (See p. 26.) In the suburbs, land costs are strongly influenced by large lot zoning practices and tend to be closely correlated with the affluence of the community as measured by estimated per capita income. (See pp. 28-30.)

Furthermore, land costs have been affected by recent trends toward lower density zoning. Nearly 1 out of 4 acres zoned for residential development in 1970 have since been rezoned to require larger minimum lot sizes. (See p. 27.)

Land and housing costs have created formidable obstacles to home ownership. The three most restrictive municipalities in the Region have created minimum housing costs affordable by less than 15% of all American families as measured by family income. (See pp. 32-33.) Planning and zoning commissions can play a positive role in reducing housing costs by allowing for smaller sized houses on smaller sized lots. Suburban zoning commissions could stimulate the construction of lower cost housing simply by permitting two person families to build housing meeting their spatial needs on one rather than two acre lots. Significantly, the Plan of Regional Development identified areas in each municipality where one acre zoning is feasible

as long as provisions are made for clustering. In three municipalities which have 2 acre zoning and excessive minimum floor area requirements, housing costs savings ranging from \$20,000 to \$31,000 could be achieved by permitting smaller houses on smaller lots. (See pp. 35-37.)

The most efficient way of building lower cost housing is by allowing for multi-family residential development. Nine of the Region's twelve municipalities with zoning regulations allow for multi-family housing. (See p. 44.) However, in actual fact, most of the responsibility for providing multi-family has been placed on four municipalities comprising the urban core of the Region. The remaining municipalities have made it unprofitable or impossible for developers to build, largely by undermapping for multi-family housing, requiring excessive minimum tract sizes, excessive minimum floor area requirements, by limiting the maximum number dwellings per structure and by limiting the maximum number of bedrooms per dwelling unit. (See pp. 47-48.) In 1977 only 2.4% of all residentially zoned land in the Region permitted multi-family housing as a matter of right and 98% of this land was in Waterbury. (See p. 47.)

Mobile homes are one of the most inexpensive forms of housing available on the market. However, nine of the thirteen municipalities in the Region have adopted zoning regulations which exclude mobile homes. (See p. 50.) Those which allow this form of housing require a special permit and consign their location to less desirable areas such as manufacturing and commercial zones. Less than eight tenths of one percent of all the Region's land allows mobile home parks as a use by special permit. (See p. 52.) Only one municipality allows mobile homes outside of mobile home parks; but even this opportunity is limited by a minimum floor area requirement of 1,000 square feet, thus preventing the use of all single-wide mobile homes -- they are all less than 930 square feet. See p. 52.)

Ten of the Region's twelve municipalities with zoning allow for the construction of two family housing and the conversion of single family housing to two unit structures. (See p. 54.) Significantly, the two municipalities which prohibit two family housing also prohibit multi-family housing (3 or more dwelling units). However, in other municipalities having regulations discouraging the construction of multi-family housing, the conversion or construction of two family houses has been an alternative means of offering lower cost rental housing. Nearly half of the Region's multi-family housing in 1970 was in structures having two dwelling units. (See pp. 54-56.)

In conclusion, a thorough understanding of the extent to which individual municipalities restrict housing opportunities and create housing costs requires a comprehensive assessment of numerous components of both subdivision and zoning regulations. The aggregate effect of numerous restrictive regulations has been felt most by those desiring to live in five municipalities in the path of immediate development. The Summary Table indicates that these five municipalities have adopted at least six requirements which unnecessarily discourage housing opportunities and raise housing costs. In contrast, municipalities which have already experienced rapid urban development or are clearly removed from the path of immediate development are not regulating housing opportunities and costs to the same degree. Nevertheless, these municipalities could also reduce housing costs and improve housing opportunities by reevaluating their regulations in light of minimum standards consistent with the public health and safety. Our Regional analysis of restrictive zoning indicates that all thirteen municipalities could improve housing opportunities to one degree or another by making a least cost assessment of their regulations.

Summary of the Major Zoning and Subdivision Regulations and Trends Having the Greatest Fiscal Impact on Least Cost Housing Alternatives within Municipalities in the CMAA: March 1970

	Zoning Regulations					Subdivision Regulations					Placed Impact		
	No Multi-Family Housing Regulations	No Two-Family Housing Regulations	No Regulations Allowing Conversion of Single-Family Houses to Two-Family Houses	Excessive Floor Area Requirements for the Needs of 2 person Families	No Provision for Clustered Development	Limited Supply of Land Zoned for Single-Family Housing on Lots Less Than 1 Acre	Limited or Non-existent Supply of Land Zoned for Multi-Family Housing	Recent Increases in Minimum Floor Area and Lot Size Requirements	Excessive Minimum Road Surface Thickness	Excessive Minimum Road Width Requirements	Excessive Open Space Dedication Standard	Least Cost Single-Family Housing in Small Lot Zones Affordable by Less than 25% of U.S. Families	Least Cost Single-Family Housing in Large Lot Zones Affordable by Less than 25% of U.S. Families
Manitowish													
Essex Falls													
Bethlehem													
Cheshire													
Middlebury													
Newark													
Oxford													
Prospect													
Southbury													
Thomaston													
Waterbury													
Watertown													
Wolcott													
Woodbury													

Multi-family housing is regulated through floating zones.

VII. Appendices

Appendix 1:

Sources of Information for Total Development Costs in
Chapter II for Small Lots and Large Lots in the CNVR

1. Road cost information is based on information derived from R.S. Means Co., Inc. Building Construction Cost Data 1977; an interview with Woodbury's Town Planner providing information on the 1977 low bid* for road construction in Woodbury and an interview with the City Engineer of Waterbury. Cost for constructing the road are based on the following component costs:
 - a. Preparation and rolling of subbase - \$2.00/sy/inch
 - b. Base course of bank run gravel at
 - \$4.00/sy per 18 inches
 - 2.65/sy per 12 inches
 - 2.22/sy per 10 inches
 - 1.16/sy per 8 inches
 - c. Bituminous concrete at
 - \$2.64/sy per 2 inches total thickness
 - 3.40/sy per 2-1/2 inches total thickness
 - 4.00/sy per 3 inches total thickness
 - 5.32/sy per 4 inches total thickness
 - 5.98/sy per 4-1/2 inches total thickness
 - d. Bituminous concrete curbing 6 inches wide by 8 inches high at \$1.85/linear foot
 - e. Concrete curbing at \$7.10/linear foot
 - f. Concrete sidewalk at
 - \$2.72/sf per 6 inch thickness
 - 1.84/sf per 4 inch thickness
 - g. Road oil surfacing (for Waterbury)
at \$1.25/sy
 - h. Broken stone at \$.35/sy/inch
2. Telephone lines are placed underground by SNETCO as a matter of policy. Developers are not charged for this expense except where terrain or bedrock would make the cost of underground installation prohibitive. However, developers are required to pay for the underground installation of electric lines. Actual developer costs are based on the difference in cost between

installing electric lines underground (\$6.42/foot) versus overhead (\$4.50/foot plus an Internal Revenue Service tax of .903851% on the total cost per linear foot). The Connecticut Light and Power Company has indicated that the difference in cost is \$3.61 per linear foot including tax for a developer to install underground electric lines. Interviews with the Waterbury Office of SNETCO, September 20, 1977.

3. The cost of 8 inch sanitary sewer pipe is based on information supplied by the Garrasino Construction Company of Watertown on September 20, 1977.
4. Under this hypothetical comparison of development costs, drainage costs per linear foot are assumed to be equal in every municipality. Information on drainage costs is based on a 15 inch pipe supplied by the City Engineer of Waterbury, September 20, 1977.
5. Information on the cost of an 8 inch water pipe is based on information supplied by the Engineering Department of New Haven Water Company, September 19, 1977. It was indicated that the company charges developers \$15.66 per linear foot to install 8 inch pipe in new subdivisions. If excavation involves the removal of pavement, there is an incremental cost of \$7.80 for a total cost of \$23.46 a linear foot. The installation of 8 inch water pipes does not include fire hydrant installations.
6. The cost of precast concrete catch basins, frames and cover is based on information derived from R.S. Means Co., Inc., Building Construction Cost Data 1977.
7. The cost of planting deciduous trees is based on an interview with the Henry F. Mitchell Nursery Company in Cheshire, October 28, 1977. The costs per tree is \$20 plus 12% freight charges for a total of approximately \$25 per tree. Municipalities in the CNVR which provide standards for tree planting require a maximum spacing of 50 feet between trees. It is assumed

in this hypothetical example that trees are planted on both sides of the street and that the average spacing of trees is 25 feet. This results in two \$25 trees every 25 feet at a cost of \$2 per linear foot. In the case of Cheshire the R-20 residential zone requires 5 trees per lot. This translates into 10 trees every 50 feet of lot frontage (including both sides of the street) or \$5 in cost for trees per linear foot.

8. The cost of development includes the cost of the premium for a performance bond for new construction of a road. Premium costs are \$9 per \$1,000 of the construction price for all construction under \$500,000. This represents only nine-tenths of one percent of the total cost of development. Information was obtained from the Bond Department of the Hartford Office of Aetna Life and Casualty, November 15, 1977.

Appendix 2-A:

Total Development Costs Per Linear Foot in Maximum Lot Size Residential Subdivisions in the CNVR: October 1977

Municipality	Road Costs Per Linear Foot	Underground Electricity and Telephone	Sanitary Sewer Pipe	Drainage Costs Per Linear Foot	Cost of 8 Inch Water Pipe	Cost of Pre-Cast Concrete Catch Basin, Frame and Cover Per Linear Foot	Deciduous Tree Cost/Linear Foot	Total Cost of Development Per Linear Foot	Cost of Performance Bond Per Linear Foot	Total Cost of Development Per Linear Foot
Zeoson Falls	\$39.58	*	**	\$9.50	***	\$7.33	****	\$56.41	\$.51	\$56.92
Bethlehem	31.10	\$3.61	**	9.50	***	7.33	\$2.00	53.54	.48	54.02
Cheshire	35.90	3.61	**	9.50	***	5.50	3.75	58.26	.52	58.78
Middlebury	29.33	*	**	9.50	***	7.33	****	46.16	.42	46.58
Naugatuck	36.33	*	**	9.50	***	5.50	2.00	53.33	.48	53.81
Oxford	30.65	*	**	9.50	***	7.33	****	47.48	.43	47.91
Prospect	32.55	3.61	**	9.50	***	8.80	2.00	56.46	.51	56.97
Southbury	25.76	3.61	**	9.50	***	5.50	2.00	46.37	.42	46.79
Thomaston	19.09	*	**	9.50	***	7.33	2.00	37.92	.34	38.26
Waterbury	20.74	*	\$15.00	9.50	\$15.66	7.33	****	68.23	.61	68.84
Watertown	33.19	*	**	9.50	***	5.50	2.00	50.19	.45	50.64
Wolcott	35.31	*	**	9.50	***	6.29	****	51.10	.46	51.56
Woodbury	24.40	3.61	**	9.50	***	7.30	2.00	46.81	.42	47.23

*No requirement for placing telephone and electricity lines underground.

Source: See Footnotes in Appendix 1.

**Sewer service is not available.

***Water service is not available.

****No requirement for tree planting.

Appendix 2-B: Total Development Costs per Linear Foot in Minimum Lot Size Residential Subdivisions in the CNVR: October 1977

Municipality	Road Costs per 1 Linear Foot	Underground Electricity and Telephone Cost per 2 Linear Foot	Cost of 8 Inch Sanitary Pipe Linear Foot 3	Drainage Costs per 4 Linear Foot	Cost of 8 Inch Water Pipe/5 Linear Foot	Cost of Pre-Cast Concrete Catch Basin, Frame and Cover per 6 Linear Foot	Deciduous Tree Cost per 7 Linear Foot	Cost of Performance Bond per Linear Foot	Total Cost of Development per Linear Foot
Beacon Falls	\$39.58	*	\$15.07	\$9.50	\$15.66	\$7.33	***	\$.78	\$87.85
Bethlehem	31.10	\$3.61	**	9.50	***	7.33	\$2.00	.48	54.02
Cheshire	49.82	3.61	15.00	9.50	15.66	5.50	5.00	.94	105.03
Middlebury	29.33	*	15.00	9.50	***	7.33	***	.53	61.71
Naugatuck	36.33	*	15.00	9.50	15.66	5.50	2.00	.75	84.74
Oxford	30.65	*	**	9.50	***	7.33	***	.43	47.91
Prospect	32.55	3.61	**	9.50	***	8.80	2.00	.51	56.97
Southbury	25.76	3.61	**	9.50	***	5.50	2.00	.45	50.82
Thomaston	19.09	*	15.00	9.50	15.66	7.33	2.00	.61	63.29
Waterbury	20.74	*	15.00	9.50	15.66	7.33	***	.61	68.84
Watertown	33.19	*	15.00	9.50	15.66	5.50	2.00	.72	81.58
Wolcott	35.31	*	15.00	9.50	***	6.29	***	.59	66.69
Woodbury	24.40	3.61	**	9.50	15.66	7.33	2.00	.56	63.86

*No requirement for placing telephone and electricity lines underground.

Source: See Footnotes in Appendix I.

**Sewer service is not available.

***Water service is not available.

****No requirement for tree planting.

Appendix 3-A: Acres Zoned* for Residential Development in the Central Naugatuck Valley Region by Lot Size: 1977

Municipality	Zoned for Multi-Family as a Permitted Use				Zoned for Single-Family as a Permitted Use								Total Acres
	Acres	Percent	Under 20,000 square feet		20,000 to 39,999 square feet		40,000 to 79,999 square feet		80,000 square and over				
			Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent			
Beacon Falls			4,778	86.9	716	13.1	0	0	0	0	5,494		
Bethlehem		No Zoning Regulations											
Cheshire			0		2,995	16.4	8,005	43.8	7,273	39.8	18,273		
Middlebury			0		0		5,704	53.8	4,882	46.2	10,584		
Naugatuck			5,816	64.2	3,243	35.8	0		0		9,059		
Oxford			0		0		18,212	100.0	0		18,212		
Frospert			0		0		1,663	19.6	6,827	80.4	8,490		
Southbury			0		2,672	10.8	14,845	60.2	7,126	29.0	24,643		
Thomaston			1,145	16.3	662	9.5	5,186	74.2	0		6,993		
Waterbury	4,077	25.4	11,961	74.6	0		0		0		16,038		
Watertown	101	0.6	1,951	11.6	3,315	19.7	5,139	30.6	6,296	37.5	16,802		
Wolcott			0		2,951	24.1	9,281	75.9	0		12,232		
Woodbury			0		0		6,011	26.4	16,771	73.6	22,782		
Total	4,178	2.4	25,651	15.1	16,554	9.7	74,046	43.7	49,175	29.0	169,602		

*The acres zoned for residential development were derived from planimeter calculations of the zoning maps of each municipality effective August 1, 1977.
Source: Based on planimeter calculations prepared by the CNV/NPA staff, August 1, 1977.

Appendix 3-B:

Acres of Vacant Land Available* in Residential Zones of the
Central Naugatuck Valley Region by Lot Size: 1977

Municipality	Zoned for Single-Family as a Permitted Use										Total Acres
	Zoned for Multi-Family as a Permitted Use		Under 20,000 square feet		20,000 to 39,999 square feet		40,000 to 79,999 square feet		80,000 square and over		
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	
Beacon Falls			3,055	88.8	382	11.2					3,437
Bethlehem		No Zoning Regulations									
Cheshire					585	6.1	4,413	46.4	4,510	47.4	9,508
Middlebury					0		3,179	44.4	3,982	55.6	7,161
Naugatuck			2,149	54.7	1,774	45.3					3,923
Oxford			0		0		14,017	100.0	0		14,017
Prospect			0		0		462	27.3	1,230	72.7	1,692
Southbury			0		757	4.3	11,702	67.6	4,841	27.9	17,300
Thomaston			294	8.2	514	14.4	2,742	77.2	0		3,550
Waterbury	280	6.4	3,922	93.5	0		0		0		4,192
Watertown			257	2.5	2,537	24.9	4,315	42.5	3,047	30.0	10,156
Wolcott			0		860	15.4	4,720	84.5	0		5,580
Woodbury			0		0		4,851	24.3	15,123	75.7	19,974
Total	280	0.3	9,420	9.6	7,409	7.5	50,401	50.2	32,733	32.6	100,500

*Acres of vacant land available excludes all land that has been built upon, all wetlands, all waterbodies, and all dedicated lands owned by the State, the Federal Government and water companies.

Source: Based on planimeter calculations prepared by the CNVRPA staff November 1977.

Appendix 3-C: Acres of Vacant Land Suitable for Development* in Residential Zones of the Central Naugatuck Valley Region by Lot Size: 1977

Municipality	Zoned for Single-Family as a Permitted Use																				
	Zoned for Multi-Family as a Permitted Use				Under 20,000 square feet				20,000 to 39,999 square feet				40,000 to 79,999 square feet				80,000 square and over				Total Acres
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent					
Beacon Falls					759	82.8	158	17.2	0	0									917		
Bethlehem			No Zoning Regulations																		
Cheshire					0		25	0.6	2,187	54.1	1,833	45.3							4,045		
Middlebury					0		0		883	36.1	1,558	63.9							2,441		
Naugatuck					638	43.5	826	56.4	0		0								1,464		
Oxford					0		0		4,315	100.0	0								4,315		
Prospect					0		0		345	28.1	883	71.9							1,228		
Southbury					34	0.6	142	2.6	4,210	78.0	1,012	18.7							5,398		
Thomaston					49	6.6	85	11.6	603	81.8	0								737		
Waterbury		270	24.5		831	75.5	0		0		0								1,101		
Watertown					228	4.8	843	18.0	2,561	54.6	1,060	22.6							4,692		
Wolcott					0		415	22.1	1,460	77.9	0								1,875		
Woodbury					0		0		2,071	29.2	5,028	70.8							7,099		
Total		270	0.7		2,539	7.2	2,494	7.2	18,635	52.8	11,374	32.2							35,312		

*Vacant land suitable for development includes those soils that can be developed with on-site septic disposal systems at low densities. These soils are well-drained, moderately well-drained, deep and permeable or well-drained soils having an impermeable layer. Vacant land suitable for development also includes lands conditionally suitable as defined in the CNVRPA Land Use Element

Source: Based on planimeter calculations prepared by the CNVRPA staff July 1, 1977 to January 1978.

Appendix 3D:

Number of Acres in which Residential
Uses are Allowed in Non-Residential
Zones: 1977

Municipality	Single-Family Dwelling by Lot Size						Total Number of Acres	Percent of Zoned Land
	Multi- Family	Mobile Homes	Under 20,000	20,000 to 39,000	40,000 to 79,000	80,000 and over		
Beacon Falls	0	156	156	0	0	0	156	2.4
Bethlehem	No Zoning Regulations							
Cheshire	0	0	0	189	175	2,551	2,915	13.7
Middlebury	0	0	0	0	234	970	1,204	10.2
Naugatuck	46	0	0	0	0	0	46	0.4
Oxford	0	0	0	0	2,287	0	2,287	10.7
Prospect	0	0	0	0	0	0	0	0.0
Southbury	0	0	0	5	245	457	707	2.7
Thomaston	0	445	0	0	0	0	445	5.7
Waterbury	826	826	0	0	0	0	826	4.4
Watertown	60	0	0	0	0	0	60	0.3
Wolcott	0	0	0	0	0	0	0	0.0
Woodbury	0	0	30	0	0	165	195	0.8
Total	932	1,427	186	194	2,941	4,143	8,841	4.4

Source: Based on planimeter calculations prepared by the CNVRPA staff, August 1, 1977

Appendix 4:

Design Standards for Drainage Systems and
Standards for Dedication of Open Space in
Municipalities in the CNVR: January 1978

Drainage Design Standards Measured in Storm Years				
Municipality	Pipe	Channels and Trunk Lines	Culverts Crossing Streets	Minimum Standards for Dedication of Open Space
Beacon Falls	*	*	*	N.S.
Bethlehem	10	25	50	10% of subdivision
Cheshire	10	N.S.	50 ¹	N.S.**
Middlebury	*	*	*	1000 sf/lot with a minumum of one acre
Naugatuck	*	*	*	1000 sf/lot with a minimum of one acre
Oxford	N.S.	N.S.	N.S.	N.S.
Prospect	10	25	50 ²	Minimum of one acre but not to exceed 10% of subdivision
Southbury	10	25	50	10% of subdivision
Thomaston	N.S.	N.S.	18 inch pipe	N.S.**
Waterbury	N.S.	N.S.	N.S.	N.S.**
Watertown	25	25	50	2000 sf/lot with a minimum of one acre
Wolcott	10	50	50	10% of subdivision with a minimum of one acre
Woodbury	50	50	100 ³	15% of subdivision

*Minimum standard of 15 inch pipe.

**These municipalities have provided open space standards within their regulations
for cluster subdivision.

N.S. = Not specified

¹This is the standard used for large watersheds of one square mile.²This is the standard for culverts constructed under major road arteries.³This standard applies to culverts which carry major waterways and rivers
which are subject to seasonal flooding.

Source: Subdivision regulations of each municipality, January 1978.

Appendix 5:

A Comparison of the Number of Acres
Rezoned for Different Lot Size and
Floor Area Requirements in the CNVR:
1970 to 1977

Municipality	Number of Acres Rezoned for Lower Densities	Number of Acres Rezoned for Higher Densities	Number of Acres with Increased Floor Area Requirements	Number of Acres Rezoned for Lower Densities and for Increased Minimum Floor Areas
Beacon Falls	0	0	0	0
Bethlehem	0	0	12,567	0
Cheshire	0	0	0	0
Middlebury	1,156	0	11,766	1,156
Naugatuck	62	3,246	0	0
Oxford	0	0	0	0
Prospect	2,616	0	9,248	2,616
Southbury	15,546	14	0	0
Thomaston	0	0	7,757	0
Waterbury	0	0	0	0
Watertown	310	15	0	0
Wolcott	1,974	1,791	12,488	1,974
Woodbury	16,053	0	0	0
Total	37,717	5,066	53,826	5,746

Source: CNVRPA staff work, December 1977 to February 1978.

Appendix 6:

Least cost development versus least cost maintenance

What is least cost for the developer may not be least cost later on for the home owner, the neighborhood or the town. While the developer may support the use of least cost standards in order to maximize profits, the town often demands higher standards in order to reduce its long term cost for maintaining major public utilities such as roads, sewers, drainage systems, sidewalks and parks. The essential question, of course, is how long should any major utility last without need for major maintenance or replacement. A town wishing to optimize its resources may demand a road system that will last as long as the roads of the Roman empire while a developer may wish to build a road that lasts no more than 5 years. While there is no rational means of arriving at an acceptable standard for the minimum service life of a road, the American Association of State Highway and Transportation Officials has adopted a service life standard of 20 years. By adopting a minimum service life standard for land improvements, a municipality may have a better basis for determining if its requirements are excessive or inadequate. As it stands now, members of planning and zoning commissions in some municipalities end up bargaining over standards for roads, sidewalks and open space largely because they have no reference point for the service life of these improvements. In these cases, land improvement requirements are less a reflection of least cost standards (based on an acceptable service life of a utility) than of the negotiations between developers and local commissions.

In summary, if a municipality were to adopt an acceptable minimum service life standard for all major land improvements, the issue of least cost development versus least cost maintenance would be resolved. However, developers and planning and zoning commissions may be a long way from reaching agreement on an acceptable service life standard.

Appendix 7: Least Cost Housing: The Role of the Builder

A municipality may offer smaller sized lots, smaller minimum floor areas and provide for clustered development but without the support of the builders these inclusionary zoning programs may simply result in larger profits for the developer. In the Central Naugatuck Valley, land costs and house size tend to be closely correlated with the socio-economic status of the community. Houses built by developers in the more affluent municipalities are often considerably larger than the minimum required by their zoning regulations. As an example, the Woodbury Town Planner has indicated that new houses are built with at least 1300 square feet even though the regulations only require a minimum of 900 square feet. Similarly, the Cheshire Town Planner estimates that the average new home in Cheshire has 1800 square feet despite the fact that the town's zoning regulations have no minimum floor area requirement. The critical issue in both cases is that developers build houses to suit the demands of a market created by local regulations.

However, where the smaller less expensive houses are the predominate choice of new home buyers, developers build to that market. As an example, the Town of Prospect has recently responded to the demands of one developer by reducing its lot size requirements from two acres to one acre per dwelling unit in several areas of town. According to the developer, the larger sized lots were unmarketable in Prospect since it is a working class community and a 2 acre lot selling for \$25,000 was too expensive.

The builder's viewpoint is that market demand is correlated with the land use regulations of a municipality and will not change until the land use regulations are substantially altered. Some builders agree that housing costs can also be lowered in the more affluent municipalities of the Region if an effort is made to define a new housing style and neighborhood concept. According to the Executive Director of the Home Builders Association of Hartford County, planning and zoning commissions can play a significant role in reducing housing costs. However, reduction of housing costs due to excessive government regulations requires a

comprehensive cost cutting effort and not a piecemeal approach. He emphasized that commissions which waive one or two requirements for a subdivision in the hopes of providing lower cost housing may not be successful if the basic concept and design of the project has not been altered. In particular, waiving a sidewalk requirement may not sufficiently alter the design concept of the project to appeal to a different income group. Developers may then still be selling essentially the same product to the same consumer at the same price with a higher profit margin. The alternative is that a developer is allowed to create an entirely different design and neighborhood concept to appeal to a lower income group. As an example, a special design district for starter homes could be established to allow for reduced road widths and smaller house and lot sizes. The open space dedication and sidewalk requirements would be waived so as to achieve minimum standards consistent with public health and safety.

If planning and zoning commissions provide these comprehensive cost cutting alternatives for the developer, there would probably be better cooperation. A recent report by the National Association of Home Builders titled Determining the Increased Costs of Homes Due to Government Regulations, clearly indicates that Home Builders Associations across the country are taking serious interest in cutting excessive costs created by government regulations and in passing these housing cost savings onto the consumer.

In summary, the developers and the planning and zoning commissions must jointly make a commitment to a totally new housing concept and neighborhood design if the American family is to be offered affordable housing.

Appendix 8:

MINIMUM WIDTH OF SURFACING AND GRADED SHOULDER

Design Speed, MPH	Width in Feet for Design Volume of:					
	Current ADT ¹ Less Than 50	Current ADT ¹ 50-250	Current ADT ¹ 250-400	Current ADT ¹ 400-750 DHV ² 100-200	DHV ² 200-400	DHV ² 400 & Over
			Width of Surfacing			
20	20	20	20	20	22	24
30	20	20	20	20	22	24
40	20	20	20	20	22	24
50	20	20	20	22	24	24
60	20	20	22	22	24	24
			Width of Graded Shoulder			
All	2	4	4	6	8	8

Note: Design volume in terms of mixed traffic. For design speeds of 50 mph or less, surfacing widths that are two feet narrower may be used on minor roads with few trucks.

Source: American Association of State Highway Officials, Geometric Design Guide for Local Roads and Streets, 1971, p.9.

¹ADT = Average Daily Traffic
²DHV = Design Hourly Volume

VIII. Endnotes

1. 72 N.J. 481 at page 36 of the slip opinion.
2. Stephen Seidel, Housing Costs and Government Regulations, The Center for Urban Policy Research, New Brunswick, New Jersey, 1978, p. 182.
3. Home Builders League of South Jersey, Inc. et.al. v. Township of Berlin, et.al. Superior Court of New Jersey, Law Division, Camden County, decided February 23, 1978, p. 8.
4. John Radacsi, Staff Paper on Zoning Regulations Update and Analysis 1964 and 1970, Connecticut Department of Finance and Control, p. 15, unpublished.
5. American Association of State Highway Officials, A Policy on Geometric Highway Design of Rural Highways, AASHO, Washington, DC, 1966, pp. 226-27.
6. While the American Association of State Highway and Transportation Officials (AASHTO) standards do not call for wide local roads one planner in the Region indicated that there may be a need for parking space on the street especially if zoning regulations prohibit parking within the setback area of a lot. This problem, however, is generally found most often in higher density neighborhoods and can be corrected by adopting minimum road width requirements suitable for higher density development (see Table IV). In low density neighborhoods on-street parking is not necessary and should not be included as a component of a municipality's road width requirements.
7. American Association of State Highway and Transportation Officials, AASHTO Interim Guide for Design of Pavement Structures 1972, AASHTO, Washington, DC, 1974, p. 24.
8. According to one town planner one reason for specifying a 3 inch thick bituminous concrete surface is to be certain that the road builder makes the road surface at least 2 inches thick. In the absence of road inspectors, a thicker road surface standard has been viewed as insurance that the minimum pavement structure is constructed. In contrast, another municipality has engaged the services of a land use enforcement officer whose principal function is inspecting subdivision roads. This approach ensures that a better quality road is constructed but also creates a considerable expense for the developer who must pay for the inspection of his road. According to the land use enforcement officer of this municipality, the inspection fee is set at 3% of the maintenance bond and has run as high as \$3,400 in one subdivision and \$8,000 in another subdivision.
9. John Gunther, Survey of Local Open Space Regulations, Citizen's Bulletin, Department of Environmental Protection, Hartford, CT, December 1977.
10. Richard Yearwood, Land Subdivision Regulation, Praeger Special Studies, New York, NY 1971, p. 148.
11. In order to determine the fiscal impact of subdivision regulations in the Central Naugatuck Valley Region, the following major land improvement requirements were costed out: (1) lot frontage requirement, (2) the pavement thickness, (3) road width, (4) requirement for curbs, (5) requirements for sidewalks, (6) required installation of all utilities underground, (7) the minimum design standards for drainage, (8) the minimum reservation of land for open space and (9) required installation of sewer and water service.

Cost information was derived from local developers, water, telephone and electric utility companies, nurseries, insurance companies and the R.S. Means Co., Inc. Building Construction Cost Data: 1977. A detailed list of sources on cost data is presented in Appendix 1.

For purposes of comparison it was assumed that site conditions, depth to bedrock, ground cover and slope were the same for the hypothetical development in each municipality.

By standardizing the conditions faced by a potential developer, meaningful inter-municipal cost comparisons could be made on the land improvement costs and the costs of lot frontage requirements in each residential zone in the Region. Total development costs were computed for each municipality's smallest minimum lot and largest minimum lot districts since land improvements, land costs and floor area requirements often vary by zone.

12. Information on land exempted under P.A. 490 was obtained through the cooperation of Assessors in each municipality, December 1977.
13. Public Act 490 only offers tax benefits to individuals eligible and willing to participate in its farm, forest and open space tax benefits. However, by encouraging land owners to retain ownership of vacant land through lower tax assessments and by making the open space provisions of P.A. 490 open to all land owners, a municipality can influence the rate at which local land transactions occur.
14. George Sternlieb and Lynn Sagalyn, Zoning and Housing Costs, Center for Urban Policy Research, New Brunswick, NJ, 1972, p. 67.
15. However, the reduction in land costs that are offered by cluster zoning may never reach the consumer since lower land cost might simply result in higher land profits for the developers. In this case it is not zoning but competitive bidding which is responsible for the increased costs.
16. See note 2, supra, p. 32.
17. Ibid., p. 34.
18. Ibid., p. 175.
19. Walter Dudar, "Home Prices Continue to Escalate," The New Haven Register, February 26, 1978.
20. See note 2, supra, p. 187.
21. Interview, December 1977.
22. See North Cherokee Village Membership v. Murphy, 248 N.W. 2d 629 (Mich. App. 1977) for a discussion of double wide trailers which were found to meet zoning regulations for single family houses.

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Restrictions Slowing 'Least Cost Housing'

By JIM SKOWRONSKI

What would happen if the federal government, for reasons of its own, decided all cars must seat eight comfortably and be no smaller than a 1960 Cadillac?

New cars would be great big ones and carry equally big price tags. And the heavy demand for any smaller cars would jack their prices way up.

That's about what has been happening to the local housing market over the past few years, according to a new report on local zoning and subdivision regulations.

"Zoning and subdivision regulations in the Central Naugatuck Valley frequently include provisions which severely limit or prohibit the construction of moderately priced housing," says a report released this month by the Central Naugatuck Regional Planning Agency.

The report, "Least Cost Housing," says that the zoning and subdivision codes of area towns are often too strict, making demands beyond what's necessary for health and safety, and the result has been to discourage the construction of economy homes.

The area, particularly suburban Waterbury, has been requiring larger home building lots, demanding homes be of large size, and adding a variety of other measures that raise the final cost of new homes.

The changes have come as the price of buying a new home rose 70 percent between 1970 and 1977 and the cost of renting rose 38 percent. While other factors contributed to the increase, the report addresses only the role of local ordinances in the 13 towns of the Waterbury region.

Right now only about one-half of the nation's families can afford to buy the least expensive new house allowed by zoning regulations on the least expensive lots available on the area's market. The locations for these new homes would be sections of Cheshire, Naugatuck, Waterbury and Wolcott permitting small homes on small building lots.

"In contrast," the report adds, "the three most expensive areas to build housing, the two-acre residential zones of Middlebury, Cheshire and Watertown, have excluded by virtue of income about 83 of every 100 families in America."

A least cost house built in Middlebury's two-acre zone would cost an estimated, \$66,800, cost \$68,300 in Watertown's two-acre zone and \$82,500 in Cheshire's two-acre zone," the report said, adding that the minimum to code costs understate the true price of the homes.

Because developers find the two-acre subdivisions so expensive to acquire and develop, they build larger and more expensive housing to maintain their profit margins. And if they run into bedrock while installing underground utilities, that'll raise the cost higher.

And because land prices, floor area requirements and subdivision regulations have made it more difficult for most families to afford a new house, turnover of older, smaller houses has and will continue to become more limited, according to the report. That means fewer homeowners will "step-up" into a new house, limiting the market of older homes available to first-time buyers and therefore driving up the cost of existing housing stock.

Ten of the area's 13 towns have minimum requirements for the floor size of new homes, according to the report. They range from the smallest home buildable in Wolcott (720 square feet) to the smallest home buildable in Middlebury (1,300 square feet). Middlebury's minimum size is the state's third highest, according to the report.

In nine out of 10 of the towns, minimum floor-size requirements exceed the spatial needs of two person families as set by the Committee on Hygiene of Housing of the American Public Health Association. The report notes that 42 percent of homeowners have families of three or less, while some area towns require their smallest new homes to have enough space for between four and five persons. And it notes that the big homes require greater energy requirements for heating.

Since 1970, six towns in the region have either raised or established minimum floor-sizes.

"The combined effect of raising or establishing minimum floor area requirements in these six municipalities has been to increase the cost of housing for 69,863 acres of residentially zoned land or about 41 percent of all the residentially zoned land in the region," the report said.

The report also notes that towns have widely varying road ordinances, many requiring roads too wide and thick for the traffic they'll bear, and road development accounts for between 23 and 45 percent of the land improvement costs that will eventually be born by the buyer. Some towns have adopted storm drainage requirements that may be too rigid for some situations. And another cost factor is local requirement that a portion of a subdivision (15 percent in Woodbury and 40 percent in Middlebury) be dedicated as open space.

"By controlling the size of allowable building lots, limiting the supply of land zoned for a municipality's smallest lot size and delineating small lot residential zones in areas unsuitable for development (steep slopes, wetlands etc.), a municipality can discourage the construction of inexpensive housing," the report adds.

In 1977 82.2 percent of the region's vacant land available for one-family homes was zoned for lot sizes of one-acre or more, according to the report. The rest of the residential land allowed smaller build-

ing lots, and much of that is within Waterbury.

"Middlebury, Prospect and Woodbury have placed the vast majority of their vacant, available land into zones requiring a minimum of 80,000 square feet per lot (two-acres). Nearly 100 percent of Middlebury's vacant available land, 73 percent of Prospect's (excluding water company property), and about 78 percent of Woodbury's vacant available land requires a building lot of not less than 80,000 square feet in size," the report said.

The report adds that some of the towns properly use large lots to provide adequate septic systems, while big lots in others have discouraged the extension of sewers as a method of providing lower cost housing.

As for trend, the report notes that since 1970 the towns of Middlebury, Naugatuck, Prospect, Southbury, Watertown, Wolcott and Woodbury have rezoned 46,000 acres of land for lower population densities.

And during 1977 this came out to an average cost per building lot of \$21,600 in Cheshire, \$17,300 in Middlebury, \$17,600 in Southbury and \$19,000 in Woodbury. The report notes that there's a correlation between a town's per capita income and price per building lot.

Eliminating minimum floor sizes, and allowing homes to be built according to market demands, say for a two-person family, would result in savings in cost of from \$1,450 in Waterbury to \$15,000 in Middlebury, according to the report. It adds that there are portions of some towns where sewers could be made available or where soil conditions exist to support smaller lot sizes.

In 1977 only 2.4 percent of all residentially zoned land in the 13-town region permitted multi-family housing as a matter of right. And 98 percent of this land was in Waterbury.

"The most efficient way of building lower cost housing is by allowing for multi-family residential development," the report said. Because other towns have made it unprofitable or impossible for developers of multi-family housing to build, the brunt of the multi-family crush has fallen on Waterbury, Naugatuck, Cheshire and Watertown.

The report says other of the towns have placed land for multi-family housing in zones where insufficient vacant land exists, require minimum lots of too great a size, limited the number of units per building and put up other restrictions that make the construction of multi-family housing unprofitable.

And the report adds that nine of the 13 towns have adopted regulations excluding mobile homes, another low cost housing alternative. Those that allow them require special permits and limit mobile home parks to less desirable commercial or industrial tracts of land.

The planning agency, in the report, offers to assist the towns in changing their regulations to allow for lower cost housing.